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Malignancies of the Female Genital Tract

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THERE can be no doubt but that the increasing death rate from cancer not only in the United States but in the entire civilized world constitutes one of the major health problems confronting the physician of today.

The bureau of vital statistics covering the registration area of the United States shows a steady increase in deaths from "cancer and other malignant tumors," from 63 per 100,000 in 1900 to 107.9 in 1935, thus rating cancer next to diseases of the heart, which lead the list as a cause of death. It is interesting to note that the arid southwest, for some reason not as yet understood, has a lower death rate from cancer than the rest of the nation. This is also reflected in El Paso's cancer death rate, which in 1937 was 88.7 per 100,000, or a total of 95 cancer deaths, 14 of which were uterine and 6, other female organs. I do not believe this increase can be explained by an increase in the average age of the population, or improvement in diagnosis, but must be accounted for by underlying factors and forces as yet not understood.

In women, who bear the brunt of the cancer deaths in approximately the ratio of seven to six for men, we find that in round numbers one-half of the cancers in women originate in the generative organs. Thirty per cent in the female genital tract and 20 per cent in the breast.

In reviewing our work covering the past 20 years, our records show we have treated by irradiation alone, or in conjunction with surgeons, 421 patients with malignancies of the female genital organs. As to nationality, 189 were Americans, 228 were Mexicans and 4 were colored. It is worthy of note that carcinomas are appearing at an earlier age. Between the ages of 20 and 30, there were 8, all being carcinomas of the cervix; between 30 and 40, 58; between 40 and 50, 132; between 50 and 60, 198; between 60 and 70, 57; between 70 and 85, 15; and 52 with the age undetermined. In carcinoma of the cervix, 312 were multipara and 9 nullipara. I regret that the space allowed for this paper prevents me from giving credit to the doctors referring the patients.

Malignancies of the female genital tract are divided into those involving: (1) the vulva; (2) the vaginal tube; (3) cervix; (4) fundus; (5) ovary and tube.

CANCER OF THE VULVA

Carcinoma of the vulva is compaartively rare, occurring only four times in our series. It is usually of the squamous cell variety and frequently begins on an area of leucoplakia accompanied by senile atrophy, but may begin as a chronic ulcer. It is always a serious condition and its early recognition and eradication is essential if metastasis are to be prevented.

In two of our cases, the lesion was located posteriorly on the labia majora and occurred before menopause. One was irradiated and then operated, but without relief. One had a vulvectomy and inguinal gland dissection and is now receiving deep x-rays for pelvic metastasis. One was irradiated and then operated, survived the five-year period and died of other causes. One was electro-coagulated and irradiated and has survived the five-year period without recurrence.

Malignancy of the vulva should be considered as a surgical rather than a radiological problem. Even when the inguinal glands that drain the area from an ulcer on the vulva are enlarged, one should not lose hope. Two-thirds of the enlarged inguinal glands removed at operation have proven to be inflammatory and not malignant. The character of the cancer bed here is such that lesions of the vulva do not do well under irradiation.

CANCER OF THE VAGINA

Cancer of the vaginal tract as a primary lesion is rare. The vaginal tube is, however, frequently involved by direct extension from cervical and vulvar lesions and from ovarian metastasis. In our series, five carcinomas and one sarcoma were primary in the vaginal tube. The sarcoma responded to radium pack and deep x-ray, and has remained well over ten years. Early squamous cell carcinomas of the vaginal tube are destroyed by electrocoagulation and radium packs. Advanced cases are hopeless and deep x-ray offers the best palliative results.

CANCER OF THE CERVIX

Carcinoma of the cervix, with the exception of Stage I cases, has by almost unanimous consent been handed over to the radiologist. It is regrettable that so many cases reach the radiologist in the second, third and fourth stages. Cancer of the cervix is perhaps the most easily preventable of all cancers. The outstanding etiological factors are endocervicitis, laceration and ectropion. Proper eradication of these conditions will do more to control cervical carcinoma than any other measure

available. Collected statistics quoted by Saltzstein and Topcik reveal that in 18,500 adequately treated chronic cervical lesions, only 15 cancers developed later. Conversely, of 2,255 patients with cancer of the cervix, only 33 had had adequate treatment of cervical lesions.

It has been well said that the obstetrician and gynecologist can prevent more cervical cancers than the surgeons and radiologists can cure. The cervix being a silent area, the disease usually progresses to an advanced stage before the patient realizes that there is anything wrong. At least 80 per cent of all patients are in an advanced stage when first seen. The death rate from cancer of the cervix can and will be materially reduced when women thoroughly understand the necessity for repair to all parturition wounds, the dangers from mechanical and chemical irritations and bacterial infections, and have an appreciation of hereditary tendency, as they have of tuberculosis.

The most frequent form of lesion on the cervix is that resulting from a laceration that permits the columnar epithelium lining the cervical canal to grow down over the cervix in place of the squamous epithelium. This cervical canal lining easily becomes eroded and cystic, and is the usual site of a beginning cancer. If all columnar epithelial surfaces facing into the vagina were destroyed by linear cauterization and the surface allowed to cover over with squamous cell epithelium, a big step would be made in reducing the cancer mortality. There are some cases that will require pelvic floor repair, cervical amputation and restoration of the uterus to a normal position in order to relieve the malposition and friction that causes the erosions. In other words, cancer does not develop in healthy tissue, and with a cervix restored to a healthy position and condition the danger of a cancer is eliminated.

Diagnosis—

Unfortunately, in most instances the diagnosis is too easily made. All too frequently there is an ulcer crater surrounded by a hard ring, and infiltration has already taken place into one or both parametria. Early lesions, if one be fortunate enough to see them, consist of small surface epitheliomata when they arise from the squamous cells. They may take on the inverting or everting type. Early cancers originating in the cylindrical cells first present as a small, hard nodule which soon breaks down and ulcerates. Biopsy, thought to increase the danger of metastasis in our early work, is now a routine procedure. Grading and typing of cancer cells is of some value, but the history and extent of the disease are the main factors in determining the prognosis.

Symptoms—

The early symptoms of cancer of the cervix so well known by physicians and in many instances by patients, and, sad to say, so frequently ignored by both, are in the order of their frequency. Hemorrhage, 75%; give a history of inter-menstrual spotting; bleeding after intercourse; menses prolonged several days; inter-menstrual bleeding without pain; discharge, 20%; a foul, watery leucorrhea; pain in the pelvis, 5%. In our series, we treated 339 carcinomas of the cervix. Five of these were Stage I, 40 Stage II and 294 Stage III and IV. Sixty-six were so far advanced that treatment was discontinued in a few days and the patient placed on narcotics. Twenty-seven returned between two and five years with recurrences. We do not know the exact number salvaged from this group. We have patients return for a check-up at regular intervals, and by making no charge for examinations hoped to complete our records. This plan has failed to collect the necessary data. In general, we would say that one might expect recovery in 70% of Stage I case, 30% in Stage II, 10% in Stage III and none in Stage IV.

Treatment—

The treatment technique has been gradually changing with improved equipment and a wider knowledge of its use. At present, the average patient is first given x-ray treatment with the following factors: 220 K. V., 15 M. A., Thoraeus No. 1 filter, 50 cm. distance, 15x15 port. One field a-p and two p-a are used. From 125 to 250 "r's" are given daily until from 1,800 to 2,100 "r's" are administered to each port.

Following the x-ray treatments which are given in the office, the lesion will in some instances entirely disappear. In others, it is wise to give very moderate, heavily screened radium treatments, usually not over 1,200 m.g. hours. This point should be emphasized, for we cannot urge too much caution with radium treatments if you are able to duplicate the x-ray treatments with the factors indicated above. Formerly with our 200 K.V. machine, we gave from 5,000 to 7,000 m.g. hours of radium in these cases. Extreme caution is taken to protect the bladder and rectum. The knee-chest position is used routinely when placing radium, and the vagina is firmly packed with gauze.

From four to six weeks are required to administer the complete treatment. Our aim is to keep just below the point of severe radiation sickness. Injections of liver extract are given three times a week to lessen radiation sickness. Supportive medical treatment and close attention to diet and elimnation are essential and often turn what would have been an immediate failure into a success at least temporarily.

Complications—

Practically all cervical cancers are infected with numerous pathological bacteria. Two of our cases succumbed to acute streptococcus infection and two died from lighting up a sub-acute pelvic inflammatory process. Complications of this character are, we feel, avoided by giving the x-ray treatments before the radium is administered. Very foul ulcers will clear and heal under x-ray, and where we formerly inserted radium into highly infectious fields, today the radium field is practically sterile. Fistulae of bladder and rectum into the vagina are practically never seen in properly treated cases.

Three of our cases were complicated with pregnancy. The first was delivered of a dead child before treatment was begun. She lived only for a short time. The second was a very obese patient and the gravid uterus was mistaken for a tumor. While under treatment she delivered a ten weeks old dead fetus. This patient is still under treatment, but is not free of cancer. The third patient was delivered of a seven months baby by Caesarian section, but the baby died after several weeks. The mother has just completed her irradiation and has requested that she be returned to work. The case is regarded as hopeless as the involvement was very extensive. The most frequent terminal complication is an involvement of the ureters in the cancerous mass, resulting in obstruction to the flow of urine.

Thirty-nine of the carcinomas if the cervix had been operated upon. In some instances the malignant cervix was not discovered at the time of operation, but was reported back from the pathological laboratory or hemorrhages followed during the early postoperative weeks. In some cases the malignancy developed on a cervical stump of years standing. It is generally estimated that about 2% of cervical stumps undergo malignant changes, whereas complete hysterectomy increases the mortality by more than 2%. It is considered advisable in most benign conditions to cone out the gland-bearing membrane lining the canal of the cervix as a prophylactic measure rather than do a complete hysterectomy. Irradiation of a cervical stump carcinoma presents many difficulties, chief of which is close proximity of the intestine to the malignancy.

CARCINOMA OF THE FUNDUS

In carcinoma of the fundus, the pendulum swings back and forth between surgery and irradiation, with surgery having the preference in most cases. Cancer of the fundus occurs in two general forms, adenoma malignum and adeno carcinoma. The former is confined largely to the endometrial lining, is sometimes cured by curettment, and is easily destroyed by radium and deep x-ray. The adenocarcinoma is an infiltrating type of tumor and early invades the uterine wall and parametrium. When originating low in the uterus, it is difficult to draw a line between cervical and fundus carcinoma, as frequently both are involved. In lesions, so situated that drainage takes place into the cervical area, irradiation should first be used and then followed by surgery. Growths high in the uterine canal and which have not yet extended through the tube are best treated by pan-hysterectomy alone. If the growth has extended through either tube and involves the tube and ovary, preoperative x-ray will render the surgery more effective.

Uterine carcinoma usually occurs in women past the menopause, and an early symptom is profuse serosanguinous discharge that becomes foul after a few weeks. Pain and discomfort indicate an advanced stage and are due to an extension of the growth to the parametrium and invasion of the pelvis. In our series, 62 carcinomas were treated, 40 in conjunction with surgery.

SARCOMA

Only two cases of clinically malignant connective tissue tumors were encountered in the uterus and parametrium, one of which originated in the uterine body, the other in the region of the ovary. Following hysterectomies, pathologists not infrequently report sarcoma in fibroid tumors. Very few, in fact, not less than 0.5% of these tumors conform to the definition of a cancer, i. e., infiltration through the tumor capsule and the setting up of metastasis, resulting in the death of the host. It, therefore, seems amiss to advise patients to have fibroids removed solely because they may become malignant when the operative mortality is so much greater than the incidence of malignant degeneration.

CANCER OF THE OVARY

Cancers of the ovary seldom reach the radiologist until after they have been discovered at the operating table. If the pathologist reports a papillary adeno-carcinoma in an ovarian cyst that has been removed intact, irradiation may be dispensed with. If, however, there are extensions into the broad ligament or to the pelvic peritoneum, or if multiple implants are seen on the intestine and mesentery, surgery should be as radical as possible and followed in a week or ten days by deep x-ray.

In any event, the mortality is high. In our series, we have treated ten cases of carcinoma of the ovary. Two had extensive recurrence. One is well over 15 years and one has passed the five-year limit. One is under treatment at present. Several have died of their malignancy and some who were treated and had no further trouble may have had their tumors completely removed at operation.

I have avoided reference to the many controversal agents supposed to be instrumental in producing cancer, stressing only the point of irritation as the causative factor. It is generally admitted that the irritation is not a simple mechanical process, but there must be present a constitutional tendency. This tendency may even contain the factors that upset the internal balance within the cells, tissues and organs and the centralized control of growth. It is not at all improbable that the sex hormones which so closely resemble the carcinogenic substances, play an important factor in malignancies of the female genital tract, but with our present knowledge of endocrinology. The best advice we can give is to restore to as nearly normal as possible areas in which diseased tissue exist before the cancer develops.

Looking forward one cannot but wonder if, as a result of the systic degeneration seen in ovaries following Theelin injections, the future does not hold a large number of potential ovarian malignancies. At frequent intervals various treatments are brought forward and advocated for cancer. The American Society for the Control of Cancer recog-

nizes but three destructive agents: surgery, x-ray and radium. So we feel that until some other treatment is approved, these should constitute our armamentarium.

SUMMARY

In summary there are several points that I wish to emphasize. From my experience with 421 malignancies of the female genital tract, these conclusions are paramount:

1. Adequate treatment of chronic inflammation and irritations of the cervix and vagina is the important first line of defense against carcinoma of these organs.

2. Adequate treatment cannot be instituted unless frequent and painstaking examinations are made.

3. No lesion discovered should be assumed to be innocent until proven so.

4. If cancer is discovered, irradiation should be begun immediately. Surgery, of course, is sometimes the treatment of choice in conjunction with irradiation.

5. The opportunity for cure is a fleeting one. Advanced cases can expect only palliative results.

6. Reiterating conclusion No. 1. The gynecologist and the obstetrician can prevent more cancers of the female genitalia than can be cured by the best of treatment.

Roberts-Banner Bldg.

Medical Control of Silicosis

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QUITE a furor has been created in the United States regarding silicosis recently, due to the fact that everybody and his brother seems anxious to get into print on the subject, and, unfortunately, in some cases, with little or no basis in fact for their statements. For example, I read an article recently in which the writer cited a series of *exactly thirteen* cases, at the end of which he summarized, drew his conclusions, and turned it loose on an unsuspecting medical public.

There is no doubt in my mind that a silicosis problem exists, especially in the various states where siliceous ores are mined, but I feel that the problem should be approached cautiously and in a sane manner, so that justice may be meted out to employer and employee alike.

It behooves every physician in this state to acquaint himself with the condition so that, when called upon to handle his particular local problem, or to offer suggestions concerning possible legislation on the subject, he will not be found unprepared.

If we are to consider silicosis, I think we should define it, and while many definitions have been given by some very good authorities, I would like to give my own at this time.

"Silicosis is a chronic, incurable disease of the respiratory tract, caused by the inhalation of minute particles of free silica, characterized *clinically* by dyspnoea, a harsh unproductive cough, and a decrease in chest expansion; *anatomically* by the production of pulmonary fibrosis; *radiographically* by characteristic fibrotic nodulation; *economically* by a decrease in the efficiency of the workman; and *sociologically* by the creation of a human derelict whom someone must finally care for."

There are two types of silicosis, from many angles as different as day and night; most certainly you cannot consider them jointly, from the standpoint of the evaluation of existing pulmonary fibrosis, nor the relation of this fibrosis to incapacity for work. There are first, simple, or uncomplicated, silicosis, and second, complicated silicosis.

In simple silicosis, the clinical findings are, in my opinion, of little or no value, and, for its diagnosis, we must largely, if not entirely, depend upon a good radiograph of the thorax.

In complicated silicosis, the clinical findings are invaluable in discovering the complication which, I should say, is pulmonary tuberculosis in 90% of cases. The x-ray in complicated silicosis reveals silicosis together with the complication, and, at times, shows very plainly the effect of the complication upon the silicosis itself.

X-RAY TECHNIQUE

Speed and power are essential in producing a good chest radiograph, and to obtain these two important factors you must have good x-ray equipment; that is, equipment capable of producing 100 M.A. at from 60 to 90 P.K.V., and an electrical timing device which will give, at least, an accurate exposure of 1/20 of a second. My equipment will produce 300 M.A. at 125 P.K.V.

All my chest radiographs are taken at 100 M.A., 1/10 of a second exposure time, and 6 feet distance. These factors are constant; the only factor which varies is the number of P.K.V. used, which represents *penetration*. I think this is logical, as the only variance in chests is their thickness or the amount of tissue to be penetrated.

The thickness, or the antero-posterior measurement of the chest is taken in each case by using a sliding scale or rule similar to that used by shoemakers in measuring the length of the foot. The scale is in P.K.V. and has been carefully worked out as being correct according to the altitude in which you are working and the calibration of the tube with which you are working to produce a radiograph of proper density when developed for

I am not going into the etiology or the pathology of silicosis, nor am I going to enter into a discussion of the theories advanced as to just how the particles of silica inhaled produce the pulmonary fibrosis referred to in my definition. I am more interested at this time in the diagnosis of the condition and its control.

Read before Arizona State Medical Association, Phoenix, May 13-15, 1939.

5 minutes at a temperature of 65 degrees Fahrenheit.

It is a waste of time to try to do chest work with a 30 M.A. capacity portable x-ray unit, as your exposure time is so long that the patient moves or you get a pulsation of the heart, or the patient breathes, and the result is a blurred radiograph which is little better than nothing.

Chest pictures are taken in an upright position, the chest flat against the cassette tunnel, the dorsal surfaces of the hands resting lightly on the hips, and the shoulders thrown well forward as flat against the cassette tunnel as possible.

The exposure is made on full inspiration, being careful to see that all muscular movement of the act of inspiration has ceased.

The *marking device* must show the name and number, the date and the amount of pentration used in order to reproduce a radiograph of the *same density* at a later date, for *comparison*, as comparison of radiographs taken at intervals over a long perod is an essential feature of silicosis control.

INTERPRETATION

In my opinion, the interpretation of a chest radiograph should follow a very definite formula, omiting none of the several steps, and, unless the interpreter understands fully the import of his observations, the resulting diagnosis is, at times, meddlesome, dangerous and often criminal. Years of experience and study of thousands of flat chest x-rays, and preferably stereoscopic x-rays is the only answer.

By the experienced miner, chalcopyrite and iron pyrite are easily distinguished; personally I would be rather reticent in giving an opinion as to which piece of rock contained copper and what percentage, as I understand they are very similar in appearance. Thus it is with x-ray interpretation. Two films may be quite similar in appearance yet quite different from a standpoint of diagnosis.

1. Hilar Shadows.

In incipient simple silicosis, the hilar shadows are definitely increased in size and density, and there usually appear circumscribed dense spots somewhat larger than the calcified spots seen as a result of infantile tuberculosis. In the later stages and especially in complicated silicosis, the hilar shadows tend to decrease in size, but the density remains the same or is further increased.

2. The Bronchial Tree.

In incipient silicosis, the bronchial tree is at first slightly, and later more markedly, accentuated, and extends to the outer border of the lungs. Along the bronchial tree there begin to appear "beads" or circumscribed nodules. As the disease progresses, these "beads" increase in size from one to eight millimeters in diameter, and also in number, until the lung takes on a mottled or "snowstorm" appearance. This condition is usually bilateral and involves the entire lung, although it usually is at first more pronounced in the bases of the lungs. In the advanced stages this mottling tends to coalesce and form infiltrated areas similar to consolidation in tuberculosis.

In complicated silicosis, especially with pulmonary tuberculosis, the nodules in the complicated lung will be found to be larger than in the uncomplicated lung, and the edges become somewhat fuzzy.

3. The Apices.

In all stages of simple silicosis the apices appear clear, with the exception of the presence of the silicotic nodules. Many authorities state that silicosis is a disease of the bases of the lungs. I have not found this to be true as the nodules are equally distributed throughout all parts of the lungs. In complicated silicosis you naturally get the clouding of the apices as you do in pulmonary tuberculosis.

4. The Heart and Aorta.

In incipient simple silicosis there is little or no change in the heart shadow. In advanced silicosis the heart shadow does change and is of utmost importance in calculating the incapacity for work. The right heart is definitely dilated and the reason for this dilation is relatively simple. The right heart pumps the blood to the lung, and due to the existing fibrosis the blood vessels of the lung have little or no chance to dilate and compensate for the pressure of the pump stroke. Naturally, there is back pressure and the right heart must compensate with the resulting dilation mentioned.

The aorta usually appears dilated in silicosis; however, I believe what we see in a flat chest radiograph is the shadow of the great vessels displaced by the dilated right heart.

In many of the advanced cases of silicosis, I have observed the asthenicor vertical type of heart, even though earlier in the disease the heart appeared more or less normal.

5. The Diaphragm.

These shadows should be semi-dome-like in form with clearly defined and regular outline. The right side slightly higher than the left.

There is no change in simple silicosis, but in advanced silicosis irregilarities are sometimes found on the right side, indicating an enlarged liver. On the left side, shadows due to gas in the large bowel which obliterate the diaphragm shadow are commonly seen, and pyramidal projections indicating pleural or pericardial adhesions are fairly common.

6. The Costophrenic Angles.

These should be seen clearly and sharply de fined. There is no appreciable change in them in simple silicoss. When distorted or clouded, they indicate a previous pleurisy or pleural adhesions in advanced or complicated silicosis.

These pleurisies are usually of tubercular origin.

CLASSIFICATION

It is difficult for me to conceive of combining simple silicosis and complicated silicosis under one head, calling it a 'progressive respiratory disease," and then nonchalantly dividing the whole thing into a mere three stages, especially from the standpoint of evaluating the percentage of incapacity for work in a given case, which may vary from one to one hundred per cent.

I believe it would be better to classify the disease in terms of percentage of fibrosis rather than by stages or degrees, and, furthermore, I believe the percentage should be governed by the diameter of the silicotic nodule, especially in simple silicosis.

For example:

SIMPLE SILICOSIS

Nodules averaging	Fibrosis
1 mm. in diameter	5 to 10%
2 " " "	10 " 20%
3 " " "	20 " 30%
4 " " "	30 " 40%
5 " " "	40 " 50%
6 " "	50 " 60%

Naturally the clinical picture must also be taken into consideration, in the

Relation to Incapacity for Work;

	Incapacity
Those having up to 20% fibrosis may continue to work	None
Those having 20% to 40%— Surface work	up to 25%
Those having 40% to 60% Surface work	up to 50%

COMPLICATED SILICOSIS

The incapacity depends largely upon the complication and is much more difficult to evaluate than the mere fibrosis present; each case is a separate and distinct problem and no hard and fast rule can be laid down.

These cases are carriers and must be isolated from the working population.

For the purpose of evaluating cases in the United States, I would much prefer to use the classification adopted at the National Silicosis Conference, held at Washington, D. C., in Februaary, 1937, which consists of four groups, as follows:

Group No. No. 1.

Workmen exposed to a hazard but who have no silicosis.

Group No. 2.

Workmen having silicosis but no incapacity.

Group No. 3.

Workmen having silicosis with more or less degree of incapacity, but with no complication.

Group No. 4.

Workmen having silicosis, with more or less degree of incapacity, with complication, especially pulmonary tuberculosis.

Groups Nos. 1 and 2 may be allowed to remain at work providing there exists adequate dust control and medical control.

Group No. 3 should be transferred to surface work commensurate with ability to perform.

Group No. 4 should be definitely retired from any sort of work, and, as previously mentioned, isolated from the working population and indemnified according to the law, or in absence of a law, in accordance with the existing capacity for work.

PROGNOSIS

The prognosis in simple silicosis is exceptionally good as to life; however, victims of the disease are predisposed to an intercurrent respiratory disease which may easily prove fatal; especially is this the case in pulmonary tuberculosis.

The prognosis in complicated silicosis is exceptionally bad, especially in silico-tuberculosis, in which condition I do not consider the prognosis as favorable as in pulmonary tuberculosis alone.

TREATMENT

There is no treatment for simple silicosis except to prevent an increase in the fibrosis by removing the worker from the dust hazard.

In complicated silocosis the complication is the thing to treat.

In passing, I might say that I am firmly convinced that *dust*, which is the causative factor, can be efficiently and economically controlled in any mining operation, providing proper methods of *dust control* be conscientiously carried out. However, that is another story which I would like very much some day to tell to a group of mining men.

MEDICAL CONTROL

1. A survey should be made of all underground workers in a given mining operation by means of a thorough clinical and radiographical examination, with the end in view of determining whether silicosis exists, how much and to what degree, and dispose of these cases under the aforementioned classification.

2. A rigid clinical and radiographical examination should be made of all new applicants for underground work, with a view of excluding all silicotics and other unsuitable types. These would include flat and deformed chests, vertical type hearts, those suffering from cardiac disease, syphilis, certain types of chronic skin disease, chronic respiratory disease, espcially tuberculosis, and any other disease, deformity or condition found in the course of the examination, which, in the opinion of the examining physician, would render the applicant unfit for such work.

3. An annual or bi-annual examination of all underground workers, as deemed advisable, in order to determine the actual condition of the worker; and to maintain and preserve a clinical and radiographical record of the same, not only from the standpoint of silicosis but, also, as to his physical ability to perform the work.

In order to carry out this program, I have devised a special form.

The front of the card shows the history and physical examination data.

On the reverse side is shown the data I want to know about a silicotic patient or worker who is apt to become one. The top columns will show ten annual examinations, for comparison, and will definitely show the workman's condition when he entered the service and when he left it, which gives invaluable medico-legal evidence in a concise form. This, coupled with the x-ray file, should keep you in touch with the miner's condition, under your care, at all times.

4. Methods of filing.

The radiographs, whether one or more, are placed in a heavy manila envelope which is marked with the the name, registration or work number of the workman, and the x-ray number. These are filed,

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At our meeting in Nogales, Dr. C. A. Thomas, of Tucson, read a very interesting paper on the Surgical Treatment of Pulmonary Tuberculosis, and I asked him during the discussion if he could offer anything to these cases of Silico-tuberculosis. He replied that "in the presence of fibrosis, lung surgery was contra-indicated." I would like to ask him to tell us whether he has since changed his opinion.

alphabetically, in a battery of fireproof metal files fitted with canvas pockets to support the weight and prevent sagging.

Those actually working, those rejected, those who have left the service, and known silicotics, are segregated.

The control cards are filed alphabetically in similar files and segregated in the same manner as the radiographs, but with the addition that small signals, numbered one to twelve, are attached to the cards at corresponding points on the upper edges, to show the month in which they are to return for their annual or bi-annual recheck.

PROGRESSIVENESS OF SILICOSIS

Just one thing more before I close. While it may not be properly considered a part of this paper, I cannot refrain from saying something regarding the *progressiveness of silicosis*, about which there exists a great difference of opinion, so, for the sake of the miner as well as his employer, I would like to see the argument definitely settled.

It is my opinion that fibrosis in the lung in *simple silicosis* does *not progress*, provided the worker is removed from the dust hazard.

In *complicated silicosis* the fibrosis most certainly does progress, and the sole cause of the progression is the complication itself.

While attending the *Third Symposium on Silicosis*, held at Saranac Lake, New York, in June, 1937, I asked Dr. L. U. Gardner if he believed a simple silicosis progressed following the removal of the workman from the dust hazard. He replied that he did, and Dr. Riddell of Canada, who was present, concurred in Dr. Gardner's opinion.

Naturally, I was disappointed, especially in the face of the fact that Dr. Sampson, the radiologist of the Trudeau Foundation, had stated in his outline of a paper he read at that meeting:

"Three years observations of hundreds of cases of nodulation have revealed only isolated instances of progression."

It seems to me very likely that he might have missed the complication, as I have done at times, which caused the progression in these isolated cases.

About four months later I was rather pleased when I ran across an article in the October, 1937, issue of Industrial Medicine, under the title, "Silicosis on the Iron Range," Volume 6, No. 10, page 571. I quote:

"Gardner claims that tuberculosis in iron workers is much slower than in workers in other mines, such as lead and zinc. He claims silicosis is *not progressive* after exposure is stopped."

This seems to me to be a reversal of the umpire's decision. I certainly hope so. The miner, as well as the employer, would find themselves in a rather awkward situation if they never knew where they stood after settling a case as, apparently, there would be no end to the affair.

Finally, I wish to say that I have considerably more han thirteen cases on file to back up my opinion, as stated above, some of them with a follow-up of as long as five years.

DISCUSSION

Dr. Smith: Dr. Hogeland's paper is now open for discussion.

Dr. Bacon: Every man who has had anything to do withsilicosis knows you can't discuss that subject in two minutes, but I do wish to compliment Dr. Hogeland on his presentation of this interesting question, because it is of interest to every doctor in the state of Arizona, particularly to the lung man, the tuberculosis man, and as well as to the industrial man.

Dr. Smith: Any further discussion? If not, do you have anything further to say?

Dr. Hogeland: I would like to have some of the lung men present give me an opinion as to the surgical treatment of complicated cases of silicosis.

Dr. Richards, of Bingham Canyon, Utah, showed me the radiographic results of a case he had treated surgically, and assured me the patient had returned to work in the mines, although I could scarcely believe it.

I would like to know whether they would advise surgical treatment in such cases in an effort to do something for them.

Dr. Randolph: The whole point at issue would be the patient's vital capacity and general condition if simple silicosis is not progressive, and if we have in the contralateral lung no complication. Of course, a silicotic lung does not collapse as well as a non-silicotic lung. We have in our office used pneumothorax in quite a number of cases that have had silicosis, and I believe that in only one case have we finally succeeded in getting the cavity to close. Some have had adhesions that we have cut, but we have not been able to get the lung down. If the contralateral lung is not involved, then surgery would not be contra-indicated.

Proctology for the General Practitioner

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IN order to cover the whole subject of proctology in a broad way, only the more common conditions, that is, those which the general practitioner encounters most frequently, will be discussed. A thorough examination, including digital, anoscopic, and proctoscopic examination is necessary in all lesions of the anorectal region, in order that the more common ailments may be distinguished from those which are more serious and more infrequent such as: carcinoma, ulcerative colitis, etc.

IMPORTANT SYMPTOMS

The signs and symptoms most important are: pain, bleeding, bearing down, frequency or retardation of evacuation, itching, etc. Any change in bowel function, especially a frequency with a sense of incomplete evacuation, is an important sign in cancer, and may also accompany ulcerative colitis of any type. Pain is usually most important to the

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patient, and appears most frequently in fissures or ulcers, thrombotic hemorrhoids, and abscesses. Bleeding is most important because it may mean cancer, ulcerative colitis, amoebic colitis, a degenerating polyp, internal hemorrhoids, or fissure. Bright bleeding, with or following stool, and not accompanied by pain, is usually caused by internal hemorrhoids. The bleeding from bowel ulcers or new growths is usually darker in color and may be mixed with feces, mucus, and pus. Fissures, or ulcers, are usually located just within the posterior margin, and often difficult to locate because of the muscle spasm, and because of the severe pain caused by examination. The pain occurs with and following b.m. Bleeding is usually slight and may be only a spotting on the tissue. Sometimes a sentinel pile will give a clue. A topical application of cocaine or metycaine should be made to the lesion with a soft cotton applicator before a manual or anoscopic examination is made.

FISSURES

Only in small recent fissures is local treatment of value, as a rule. Local treatment consists in the application of hot compresses, a restricted diet, and some soothing ointment. Frequently the injection of an anesthetic in oil, as anucaine, or butecaine, into the muscle on each side and beneath the fissure, may effect a cure. The presence of an inflamed papilla or crypt above the fissure will defeat all local treatment, and surgery is indicated. If the fissure does not respond to local treatment, surgical excision is necessary. The fissure and surrounding inflamed or scar tissue is removed, with the crypt or papilla, if present. The incision is carried through the superficial part of the external sphincter muscle, and a large triangular area of skin posteriorly is removed.

Thrombotic external hemorrhoids are common and cause marked discomfort. They are due to a rupture of a vein, and form a rounded or edematous mass in the perianal skin or anal mucosa. Local excision with novocaine or nupercaine is usually all that is required. The clots may be single or multiple and the incisions must be varied accordingly.

ABSCESSES

Abscesses, which appear externally, usually result from an infection in an anal crypt, and may be classified as peri-anal or ischio-rectal. Internal abscesses are either sub-mucous or intra-mural. A peri-rectal abscess may be an extension upward of an ischio-rectal abscess. The abscess should be opened as soon as induration is located, either under local or other anesthesia. The patient must be advised that the opening of the abscess is not curative, and that a second operation for the fistula must be performed at a later date. A heavy bearing down, or throbbing pain, often accompanied by urinary retention, may indicate a submucous or peri-rectal abscess. The submucous abscess is incised its whole length and the edges sutured. The peri-rectal type should be opened from the outside because generally they originate from the extension upward of an ischio-rectal abscess. In opening any type of an abscess, wide incision with removal of a large amount of skin, is the best method. Packing is not used.

FISTULAE

A fistula may be called an unhealed abscess. The internal opening is usually found in the base of a fissure or crypt. The injection of a staining fluid, as methylene blue, may be an aid in locating the tract and internal opening. If the fistula is of long standing, the tract may be palpated running from the external opening to the anal wall. Frequently a bent probe may be passed from the internal opening outward and the tract determined in this way. Superficial fistulae, which result from peri-anal, or marginal abscesses, may pass external to the external muscle or only through the superficial portion. Incision straight through the tract over a probe, with excision of the fibrous tract is usually all that is necessary. Those fistulae resulting from ischio-rectal, or other deep abscesses, usually pass above the external sphincter muscle. The best procedure is to circumscribe the external opening, extend the incision into the fat, and dissect the tract to the anal wall. If a large amount of tissue has been removed, and there is danger of the muscle ends separating too widely when incised, a linen seton is placed around the muscle. When the wound has filled in close to the muscle, the bridge of tissue, including the muscle, is injected with local anaesthetic and incised. If the fistulous tract is short and straight, it is perfectly safe to incise the muscle at the primary operation. After-care consists in preventing bridging over of the incision, and the use of a healing powder after the first few days. Greater care must be used in anterior fistulae, especially in women, due to the elasticity of the tissues of the perineum. If there are two separate fistulae, the muscle should be incised only in one place and a two-stage procedure used for the second fistula. When there are several external openings, and only one internal, all tracts are united and treated as a single fistula.

CRYPTITIS AND PAPILLITIS

Pain and discomfort may also come from cryptitis and papillitis. The papillae may be large enough to be felt with the finger, and can always be seen with the anoscope. The crypts are pockets found at about the ano-rectal junction and may be associated with enlarged papillae. A bent probe may be passed into them and the limits outlined. Local treatment is only palliative, and surgical removal is indicated if there are symptoms present, or if it is considered that they may be foci of infection. Complete removal and not mere incision is the best procedure. They are picked up with a forcep or upon a probe and excised with the scissor, and the incision carried out into the skin for drainage.

HEMORRHOIDS

Internal hemorrhoids may come to the notice of the patient by bleeding at stool, protrusion, or sense of fullness in the rectum. They are seldom palpable unless thrombosed or the mucosa is hyperplastic due to long continued irritation of protrusion and

reduction. Some internal hemorrhoids remain in a partial prolapsed state, and some must be replaced after every movement or effort of straining. All of the above named types should be treated surgically in order to get the best and most permanent results.

Surgery is best done under spinal, sacral, or general anaesthesia. Some method of ligation and excision, or suture and excision, are the methods of choice. The ligatures used are usually heavy linen, or when the suture is used, Number I chromic gut is usually sufficient.

A certain amount of relief may be obtained by the injection treatment in mild cases. Sometimes, however, if the economic situation is explained to the patient, he will accept the operation. The injection treatment is valuable in the aged and debilitated, and in those mild cases of bleeding with little prolapse. The solutions used are usually phenol 5% in a vegetable oil, or quinine and urea 5%. The chief disadvantages of the injection treatment are: first, that too often the diagnosis of fissure, ulcer, abscess, and cancer has been missed, and all the symptoms have been attributed to "piles"; secondly, that the injection has not been properly given or too much solution used, with a resulting sloughing followed by hemorrhage or abscess. If the injection treatment has not been successful, surgery should be postponed until a good blood supply has been re-established.

PRURITIS-ANI

Pruritis-ani is most exasperating to the patient and most embarrassing to the doctor. The causes are many. Athlete's foot, or other fungus infection are frequent offenders. Infection from crypts, and rectal infections are often the cause. In the treatment all known pathology must be removed. Soothing ointments and lotions are used at first, with strict attention to cleanliness, both inside and outside the bowel, by baths and enemas. Antifungicides as sulphur and salycylic acid, and weak mercury preparations may be used. Allergy must be ruled out. Injection of anaesthetics beneath the skin, and even the injection of alcohol, may be necessary. Small doses of x-ray frequently give good results after known pathology has been removed.

Polyps should be removed with the electric cautery, or with diathermy. After removal, a section for examination should be sent to the laboratory because, frequently, a benign-appearing polyp may be undergoing malignant changes.

STRICTURE

Rectal stricture is now considered to be chiefly due to the effect of lymphogranuloma infection. They occur most often in the female, and in the Negro or Mexican. This type of stricture is accompanied by ulceration of the mucosa, thickening of the rectal wall, and a gradual stenosis of the bowel which may extend upward for several inches. A positive Frei Test is usually diagnostic. Treatment has been unsatisfactory, and in many cases, it is necessary to resort to permanent colostomy for relief.

1930 Wilshire Blvd.

Diabetes Mellitus

With Analysis of Cases Treated with Protamine Zinc Insulin

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DIABETES mellitus was described 1500 years B. C.; its satisfactory treatment with Insulin dates back to the discovery of Insulin in 1921, by Sir Frederick Banting and C. H. Best. There is probably no other disease about which more has been written, and certainly for only a few diseases has a more satisfactory method of treatment been developed than for diabetes mellitus.

The diagnostic test for diabetes is one of our oldest and simplest procedures—the testing for sugar in the urine. There are over 500,000 sufferers from the disease in the United States, alone. Yet today much can still be done by the physician in recognizing the disease more frequently and managing it more successfully.

The purpose of this paper shall be to point out some of the practical fundamentals about diabetes mellitus and its treatment with regular and modified insulins; also, to analyze some of the data secured from a study of 81 of my unselected patients. Our textbooks and literature contain a great wealth of knowledge of diabetes, but too little about the actual standardization and management of a patient.

If all physicians would attempt to manage their patients as well as they do themselves when they develop diabetes, our patients would benefit greatly. This is well illustrated by Joslin's[2] statement—"these 300 physicians do far better than my other patients, and for those under thirty-nine years of age, the mortality is less than one-quarter as great. Not a doctor in this group has died of diabetic coma since 1925."

The obligations of physicians are as follows: (1) make the diagnosis; (2) control and keep the disease regulated; (3) educate and train the patient as to the fundamentals of diabetes, diets, actions and administration of the insulins, testing of the urine, and general hygenic measures. It is in the proper education of the patient that physicians too often fail. I cannot over-emphasize the importance

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of the education of the patient because, if the doctor thoroughly schools his patient, proper control and management will follow.

DIAGNOSIS

For practical purposes, diabetes mellitus is defined as a disorder consequent upon a diminished ability of the body to utilize glucose—which is manifested clinically chiefly, by polyuria, polyphagia, polydypsia, loss of weight, fatigue and by glycosuria and a fasting hyperglycemia, 140 mgm/100 cc. of blood, or above, or a post-prandial blood sugar of 170 mgms., or above. A discussion of differential diagnosis and the cause of diabetes is not included in the scope of this paper except to call your attention to the relationship of obesity and the diagnosis of diabetes. Newburgh and Conn[5] found in many middle-aged, obese persons who appeared to have diabetes, that after the weights of these had been reduced to normal they remained aglycosuric even on high carbohydrate diets and they exhibit normal dextrose tolerance curves. They suggest this phenomenon is not due to a lack of insulin, but due to excessive accumulation of fat in the liver with a resulting impairment in its capacity to lay down glycogen. Thus, they state that their studies establish a clinical entity in which obesity is the primary abnormality and the hyperglycemia is a secondary phenomenon.

I have seen several patients who have had this type of hyperglycemia but I feel that even though we tell these individuals that they do not have true diabetes mellitus we should, for their protection, warn them that they might later develop true diabetes, especially if an infection should ensue.

In the original diagnosis of diabetes, one should establish roughly the grade of diabetes, as mild, those having a small amount of sugar in the urine, with a fasting blood sugar below 250; moderately severe, those who are spilling more than 1 to 2% sugar in the urine, and with a fasting blood sugar between 250-350 mgm./100 c.c. All patients who show acetone or diacetic acid in their urine, irrespective of other findings, must be considered severe and treated as such, because ketosis is present and coma may be impending. The severity of diabetes usually becomes less severe during the first month or so of treatment, as the general body metabolism becomes readjusted toward normal.

TREATMENT

Diabetes and its treatment becomes much easier if one has a mental picture of it. Hence, in Figure 1, I have attempted to diagrammatically picture the disease as a simple set of balances. The beam signifies the patient, who must be kept level. The endogenous deficiency of insulin shown in the left pan which, along with the food intake, must be balanced by the lessened endogenous insulin and by additional exogenous insulin. The state of balance of the pans is determined by the blood sugar level and the amount of sugar in the urine. This is represented by the indicator.

There are extraneous factors which may alter the insulin requirement of a patient. These are variables such as are illustrated by the use of the sliding weights. On the left side of the fulcrum are shown infections and other diseases, trauma and surgery and obesity. The severity of these complications can be visualized by moving the weights to the left. Thus, by this diagram, it is immediately apparent that the more severe the complication, the more insulin will be required to keep our system in equilibrium. On the right is another weight depicting the general effect of exercise; that is, it will in a measure reduce the amount of insulin required.

The age of the patient is shown on the beam. By shifting the fulcrum to the respective age of the patient, the general effect of the age is shown; namely, that diabetes in the young is usually more severe, requiring more insulin to set the balance system in equilibrium.

The physician holds the balance system with one hand, and with the other he adjusts the weights; i.e., insulin, diets, complications, etc., until the indicator points to normal blood sugars and aglycosuria. This adjustment we call standardization, or, control of the patient.

With this illustration in mind, we set about to standardize the patient. The first question is, shall we send the patient to the hospital. If the patient has ketosis or major complications, he should be sent to the hospital—but, if he does not have ketosis or any major complications, and he is moderately intelligent and cooperative, I prefer to standardize them by frequent visits to my office and by keeping in close touch with them by telephone.

There are many reasons supporting this regime. The office and home method is more economical; it is quicker, as it affords the patient an opportunity to carry on his usual habits; and it will force the patient to more quickly and thoroughly learn about diabetes, his diet and personal management.

By the aid of a nurse, even severe cases may be managed at home, if laboratory facilities are available. I have found that patients usually do better if they are forced to share the responsibility from the start.

DIET

It has been said that it makes little difference what kind of a diet a diabetic patient follows, so long as he diets. This statement is in a large measure true, but they must diet accurately.

The ratio of carbohydrates to fat in the diet is still open to discussion. At the present time, the majority of writers show preference to the higher carbohydrate diets, using ratios of from one to three grams of carbohydrate to one of fat. Seale Harris[1] has recently summarized the advantages of the higher carbohydrate diets. The chief advantages are that patients have a more normal food in-take, hence, will follow the diets more closely; carbohydrates furnish ready energy and produce complete combustion of fats, avoiding acidosis. Carbohydrates do not aid in the production of arteriosclerosis as may fats—carbohydrates are insulinogogues.

Some patients can be satisfactorily controlled

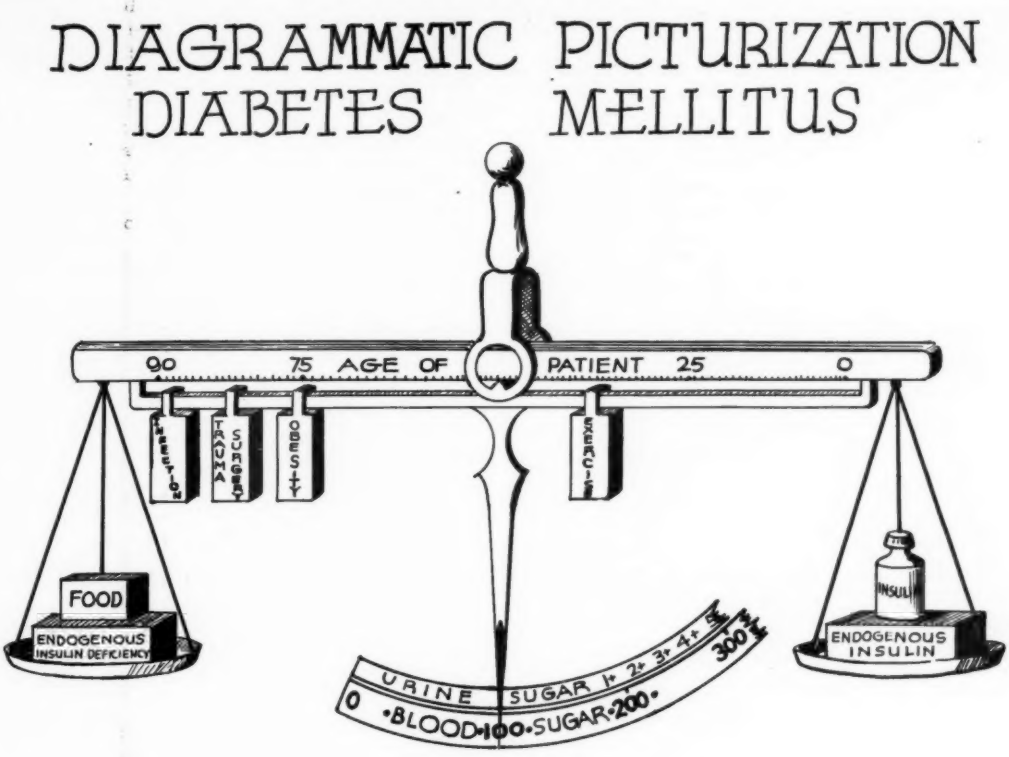

Fig. 1. See text.

without the use of insulin; for these, the higher fat diets can be used. For the patient using insulin, the present cost of insulin is not a serious factor and the addition of a few more units to care for added carboyhdrates is desirable. This is especially true since the introduction of protamine-zinc-insulin, because more liberal diets are tolerated and usually one dose of insulin daily is adequate.

There are many dietary manuals available today. Physicians should have little difficulty teaching patients how to manipulate diets, if they will take more time instructing them.

I prefer to start most of my patients from the beginning on full maintenance diets, plus whatever additional calories are necessary for that particular individual. This method is easier because it obviates the necessity of several insulin readjustments, consequent to changes in the diet from customary starvation diets through several stages up to the maintenance-plus diet. Also, the regime gives the patient sufficient needed food and calories to more quickly repair the damages wrought by the disease. With this regime, the only dietary changes necessary are those to secure and maintain the desired body weight.

The household measure system for the compiling of a diet, I have found to be more convenient for the patient, easier to use and sufficiently accurate.

INSULIN

The introduction of the modified insulins has not simplified the treatment of diabetes as far as the physician is concerned, for him it has made the treatment more intricate. The introduction of protamine-zinc-insulin, and more recently crystalline zinc insulin has made it possible to better control the patients. The management of the moderate and mild cases has been greatly simplified by the longer-acting insulin; but, in the severe cases, and the complicated cases, it is necessary to use the unmodified insulin, in combination protamine-zinc-insulin.

Regular or old insulin begins to act within a few minutes and reaches its peak reaction in about 30 to 60 minutes. This action is maintained to 2-4 hours, then recedes rapidly. Protamine-zinc-insulin is slowly absorbed, hence, the action of a single dose builds up slowly, reaching its maximum effect in about 15 to 18 hours, and the hypoglycemic effect may be maintained for 12 to 36 hours, then the action gradually subsides. The total duration of action of a common dose, is between 50 to 65 hours (McCullagh[3]). Since it acts over 24 hours, a cumulative action is produced which increases to the third day.

The total effectiveness of a single daily dose of protamine-zinc-insulin cannot be fully determined for 4 to 7 days. This cumulative action of protamine-zinc-insulin is a very important factor to be kept in mind because it is necessary to wait 5 to 7

days without a change in the trial dose to ascertain its maximum effect.

The advantages gained by the use of protamine-zinc-insulin are chiefly the number of daily doses and units required are materially reduced. In a small series, previously reported by Smith & McKeown[6], there was a unit saving of 17% to 27% and 24.3% reduction in number of daily doses. The slow, even absorption of protamine-zinc-insulin more clearly similates nature's method of supplying insulin. There are fewer hypoglycemic reactions. There is more even control, hence, fewer periods of ketosis, especially during the night when regular insulin, as used during the day, has little activity. A more liberal diet is tolerated. There is an improvement of subjective symptoms in most cases, and they live more like normal individuals.

There are certain disadvantages in the use of protamine-zinc-insulin. The most important is that the reaction comes on more slowly and may appear without subjective symptoms. These reactions are more prolonged and may require intravenous glucose or the giving of adrenalin. Patients taking protamine-zinc-insulin must have more frequent blood sugar determinations because relatively severe hypoglycemia may be present without the patient being aware of it. However, if blood sugar determinations cannot be done frequently, if the patient has an occasional positive urine specimen, less frequent sugar determinations are sufficient. Control of diurnal-glycosuria is more difficult, but there is no nocturnal glycosuria. By giving a patient a diet consisting of a breakfast, 1/6 of daily intake; 1/3 at noon; 1/3 at 6 p.m. and 1/6 at bedtime then there will be less tendency for diurnal glycosuria and less tendency for nocturnal hypoglycemia.

In a study of 1022 cases of patients taking protamine-zinc-insulin, Wilder[7] found that probably less than 5% of these individuals could not use protamine-zinc-insulin successfully.

I have had one asthmatic patient who developed urticaria from protamine, but he could use regular insulin without difficulty. Patients using protamine-zinc-insulin must have a more uniform habit of exercise, because indulging in unusual exercise is more apt to precipitate severe reactions. The patients must eat their meals regularly because the stored insulin is always active. Protamine-zinc-insulin acts too slow to be used alone in coma; here, we must use regular insulin. In the very severe cases, protamine-zinc-insulin does not give adequate control; hence, it is best used in combination with regular insulin. Due to the prolonged action of protamine-zinc-insulin, it is best to use regular insulin in complicated cases, where insulin requirement may be altered rapidly by the disease or lack of ability of the patient to eat. When surgery or acute disease become complications in a patient who has previously been on protamine-zinc-insulin, I have found it satisfactory to give them one-half the normally required dose of protamine-zinc-insulin, and then supplement with regular insulin as indicated. This smaller dose of protamine tends to supply the basal needs and assures some control at all times.

A patient taking protamine-zinc-insulin may at times show unexplained glycosuria, but since these occur for only short periods following ingestion of food, it is now thought to be of little significance. Post-prandial glycosuria is common, but an occasional spill of sugar in the urine is not serious.

I have had one patient, which I saw infrequently, that developed marked tissue atrophy at the site of injection.

It has been generally agreed by various investigators that if more than 60 units of protamine-zinc-insulin is needed for control that it is wise to supplement with regular, because a dose above 60 units of protamine-zinc-insulin is relatively less efficient and there is too much danger of nocturnal hypoglycuria. I have found this to be true, however, in one case, a 16-year-old girl, has been successfully controlled by using 140 units of protamine-zinc-insulin in a single daily dose.

The above discussion covers the pertinent points of action and limitations of the two types of insulin. The disadvantages of protamine-zinc-insulin are outweighed by its advantages. In the 81 cases presented here (Table 1), all the uncomplicated cases were successfully controlled with one dose of protamine-zinc-insulin daily, except for 27% of the severe young cases. In the severe, younger group, the combination of the two insulins gave a more satisfactory control. The very uncooperative patient is best treated with regular insulin. In the elderly patient who has coronary disease, caution must be used to prevent hypoglycemia, irrespective of the type of insulin used.

In the standardization of a patient, the most difficult decision to make is the determination of the initial doses of insulin to use. The apothecary learns by experience, the approximate size of a weight needed to balance an unknown quantity—so must the physician learn the initial doses of insulin by experience. If the first choice of weights does not balance the scales, he chooses larger or smaller weights, as indicated until an equilibrium is reached. With figure one in mind, the physician does the same with the amounts of insulin as does the apothecary with his weights. The initial doses used are, at best, intelligent guesses.

EARLY MANAGEMENT

In starting a patient out, it is well to remember that a diabetic case is not an emergency unless complications and/or acidosis is present. The vast majority of the patients when first seen have had diabetes for some time, and an emergency does not exist. The time period for controlling a patient with diabetes may safely be several weeks, because, in the average case, it is not wise to force the bodily readjustment too fast.

There are several suggestions which may aid in arriving at the initial doses. Mozenthal[4] has found the average lowering of blood sugar to be 8 mgm. per unit of insulin or, the initial daily dose may be

one unit of insulin for every 3-4 grams of glucose excreted in a 24-hour urine specimen.

When starting my patients off, using protamine-zinc-insulin, I have found a safe initial dose to be approximately one unit for every 10 mgms. of glucose in a fasting blood sugar. This dose usually is not sufficient, and is increased as indicated. During the first 3-4 days, in moderately severe or severe cases, I use small additional doses of regular with the meals, to hasten the standardization, if the urine specimen voided before the meal has more than ¼% sugar.

Another procedure which I formerly used more than now, was to first determine the requirement of regular insulin to render the urine sugar free; replace this regular insulin with protamine-zinc-insulin, using 70 to 80% of the units of regular insulin required. The full effect of giving a daily dose of protamine-zinc-insulin is not apparent for 4 to 7 days. It is more wise to under-dose a patient during the first part of the regime than to overdose them, as an emergency does not exist in the absence of complication.

The patient's tolerance to glucose will gradually increase and the requirement for insulin will decrease over a period of weeks to months, as the diabetes is kept under control. A patient who originally appeared to be a severe case may turn out to be very mild, after the maximum bodily readjustments are made. This means that after the original standardization is made, readjustments of dosage may have to be made for a long time.

TABLE 1.

ANALYSIS OF CASES

Total No. 81-Clinical 58 or 71.6%-Private 23 or 28.4%-Male 37/Female 44
Average duration of Observation 9.5 Mo.

CASES TREATED 1 Mo. or Over 79 or 97.5%
" " 6 " " 45 " 55.5
" " 12 " " 26 " 32.0
" " 18 " " 12 " 14.4
" " 24 " " 9 " 11.0

New Cases-without previous treatment 28 or 34.5%
Major complication present on admission 17 or 67.8%

Known Cases previously treated 53 or 65.4%
Major Complication present on admission 27 or 50.9%

Cases treated by Physicians for other diseases without Diagnosis and/or treatment of Diabetes 22 or 27.1%

Patients who knew they had Diabetes yet treated by Physicians who were unaware of the Diabetes 4 or 7.5%
(One of these had elective Major Surgery)

ANALYSIS OF CASES

The following analysis of 81 cases is presented to bring out certain pertinent facts. Most of the statistical material is given in the tables, and is self-explanatory. The average duration of observation was 9.5 months, and none are reported who were not followed one month, and others were observed for over two years. (See table 1.)

In this series, 67.8% of new cases presented themselves, not particularly because of the existing diabetes, but because of major complications. Fifty per cent of the old cases came seeking relief because of major complications, most of which were secondary to the diabetes itself. The average duration of the diabetes prior to admission was 58.5 months.

Physicians should be more alert to the possibilities of diabetes and more careful in their search for it and not treat complications, leaving the diabetes unrecognized. Twenty-seven per cent of these cases had been treated by physicians for other diseases and even major surgery done, without the attending physician being aware of the existence of diabetes, and/or making any attempt to treat it, and in 7.5% of these cases, the patients knew that they had diabetes and their physicians did not.

TABLE 2.

STATUS OF PATIENTS —

		ON ADMISSION		AT TIME OF ANALYSIS		
CASES Previously Diagnosed 53 Average Duration 58.5 Mo.		No. Patients	Percent	ALL CASES Condition	No. Patients	Percent
DIET	On Definite Dietary Regime	8	15	GOOD	61	77.0
				FAIR	16	20.2
				POOR	2	2.5
USING INSULIN		30	56.6		51	96.4
Not using Insulin but required		21	39.6		0	0
CONTROL	Poor	39	73.5		3	3.7
	Fair	6	11.3		17	21.5
	Good	8	15.0		59	74.7
GRADE	Mild				22	27.5
	Moderate				35	43.7
	Severe				23	28.7

Complications Developing During Treatment Died 5 (Toc. 3 Obstructive Jaundice 1-Heart Failure 1)-Coma 1- Impending Coma 1- Gangrene 1-Major Surgery 0-Severe Hypoglycemia 3 Tissue Atrophy from Insulin 1

Only 15% of the previously diagnosed group had been schooled in dietary management. (Table 2.) Most all of the patients said they had merely been instructed to "cut down on the sugar and starches." Ninety-seven per cent of these patients are now following a good or fair dietary regime. In a few instances, economic circumstances have made dieting difficult, and a few patients are uncooperative.

In this previously diagnosed group, 96.4% required insulin for satisfactory management, whereas only 56.6% were taking it at the time of their admission. There were 84.8% of these patients poorly or only fairly well controlled—now 96.2% are well or fairly well controlled. The criteria for control used, are as follows: Poor—average fasting blood sugar above 150 mgm.; fair—fasting blood su-

TABLE 3.

AGE DISTRIBUTION and INSULIN REQUIRED AFTER STANDARDIZATION.

GROUP		Number of Patients	%	Average Daily Units	Maximum Daily Units	Number Not Requiring	GRADE MILD No.	%	MODERATE No.	%	SEVERE No.	%
1	7 to 30 yrs. of Age	14	17.3				1	7.1	5	35.7	8	57.1
	Uncomplicated	11	78.5	59.7	72.1	27.2%	1	9	5	45.4	5	45.4
2	31 to 50 yrs. of Age	29	35.8				10	34.4	10	34.4	9	31.
	Uncomplicated	23		32.4	100%	0	10	43.3	10	43.3	3	13
3	51 to 84 yrs. of Age	38	46.9				13	34.1	19	50.	6	15.7
	No Major Complications	37		31.8	100%	0	13	35.1	19	51.3	5	13.7

gars below 130 with only an occasional finding of sugar in the urine. These patients were all required to test their urine for sugar 3-4 times daily for at least three successive days a week, and have a blood sugar determination, once a week to once every three weeks.

Table 3 shows the age, distribution, and the severity of the diabetes of each group. Forty-five per cent of those individuals below the age of 30 in which there were no major complications were severe cases, while only 15.7% of these above 50 years of age had severe uncomplicated diabetes. The grades were determined as follows: (1) Mild—requiring less than 30 units of insulin daily. (2) Moderate—requiring between 30 to 50 units daily, and (3) Severe—all those requiring more than 50 units daily.

There were 34 or 42% of cases which had major complications present on admission; most all of these were uncontrolled cases. During the period of observation and control of their diabetes, only one leg ulcer developed, and only one case of coma. This coma followed an attack of kidney colic, and intravenous and retrograde pyelograms. Severe hypoglycemia, requiirng administration of intravenous glucose, occurred three times. Major surgery was done successfully in 5 cases, one patient died following an unsuccessful attempt to remove a stone in the common bile duct. Three patients died of tuberculosis, two of these had tubercular meningitis; one developed marked tissue atrophy in legs and arms at the site of insulin injections.

During the period covered by this analysis, only two cases have developed significant complications, which were related to their diabetes. All the complications existing on admission have been cured or improved except as stated above and one patient that died of heart failure and nephritis. The cases of ulceration and gangrene with or without infection present on admission, have been healed and, in no case has an amputation been done.

One hundred per cent of the uncomplicated cases above 30 years of age were well controlled by one dose of protamine-zinc-insulin daily. Seventy-two and seven-tenths (72.7%) per cent of those below 30 years of age were controlled by one dose of protamine-zinc-insulin daily. Many of the cases with less serious complications were also controlled by one dose daily. The average daily dose of insulin of the young group was 59.7 units, ranging from 15 to 140 units; 32 units for each of the middle age and elderly group.

The above analysis emphasizes the need for wider application of our knowledge about diabetes. The reason that some physicians neglect this disease is probably because they do not care to spend the necessary time educating and training these patients and, secondly, because they do not take the time off to brush up their own knowledge. I would wager that most physicians know more about the use of sulfanilamide than they do about the use of insulin. Physicians should learn more about diabetes, because more can be done in the prolonging of life and in the reduction of morbidity in patients with diabetes mellitus than can be accomplished for the majority of surgical patients, yet a physician does not attempt a surgical procedure without full knowledge of it.

SUMMARY AND CONCLUSIONS

1. Diabetes mellitus is diagrammatically presented as a set of balances.
2. The diagnosis, regulation and management of diabetes mellitus is briefly discussed.
3. The advantages and disadvantages of protamine-zinc-insulin are discussed.
4. An analysis of 81 cases of diabetes is presented which shows that there is a need for a more thorough understanding of diabetes mellitus and its management.
5. The advantages in the use of protamine-zinc-insulin are much greater than the disadvantages.
6. Almost all cases of uncomplicated diabetes mellitus have been successfully controlled by using protamine-zinc-insulin once daily.

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Angina Pectoris and Its Masquerades

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TYPICAL cases of angina pectoris are generally easily recognized but there remain many borderline cases that have been confusing to most of us.

Paul White[1] says that angina is to be diagnosed just as did Heberden 150 years ago. This is to say by the history of substernal oppression with or without radiation to either arm or to both arms, usually induced by effort, especially after eating and in cold air, lasting a few minutes and relieved quickly by standing or sitting, more quickly by nitrite therapy.

Riseman and Brown[2] have laid down the following rules:

1. Onset sudden in attacks.
2. Duration short, usually a few seconds, but less than 15 minutes.

Read before New Mexico Medical Society, Gallup, May 11-13, 1939.

3. Symptoms difficult to describe, pain, pressure, squeezing, choking.

4. Region involved, and anterior chest, including the epigastrium and the inner aspect of the arms. Radiation important if occurs.

5. Attacks precipitated by exertion, especially climbing stairs or walking in the cold. Their observations were made largely on induced attacks with a 2 step stair climbing device.

It will be noted that fear of death is not mentioned above. This is very interesting because it is quite generally believed to be an essential feature of the attacks. In my experience it is rare. I believe, however, that fear is never absent in those troublesome cases that have been called "false" or "mock" angina. Furthermore, fear is the parent of cardiac neuroses and so-called neurocirculatory asthenia. The one effective cure for all these masquerades of true heart pain is barrishment of fear.

The picture of angina is clear cut if we exclude all cases not conforming to the above data.

The sensory nerves of the heart do not differ in any way from other sensory nerves, but they are much fewer in number and sensations conveyed by them are different because these nerves are not reacted on by the same stimuli as those from the skin, bones, fascia, etc., and generally do not rise into consciousness. The anginal pain is partly modified by referred pains, but on the whole its peculiar features and spread are dominated by the sympathetic nerve sensations from the heart which give to the chest pains of angina their unique and diagnostic features.

Spinal nerve root pains are entirely different. They are definitely described by the patient and their course more accurately pointed out. They generally go from back to front. They are never felt deep in the anterior midchest like anginal pains. Examples are herpes zoster, spinal root neuroma, pains from spinal arthritis or fracture, cervical rib, or tabes. The pains of angina pectoris are said not to be felt in the back[3] except rarely close to the spine high up between the shoulders. but there are exceptions. Anginal pains are rare in the sides of the chest. They are confined to the front under the stenum and generally near to it. The pain may spread to the axilla or neck, jaws or roof of the mouth. Anginal pains cannot be excited by passive movements of the arms or by twisting the neck, or lateral movements of the head or pressing over the sites of bursae. The confusion by the patient and doctor of the pains just considered and the picture caused by the play of fear and emotions on the sympathetic system causes most of our diagnostic troubles.

TYPICAL ANGINA

CASE I. Mexican trainman. Age 55 years. For 2 or 3 months he has been complaining of frequent attacks of pain starting under the midsternum going upward and across to both anterior axillary folds and shoulders and down the arms to the fingers. The distress is great and almost unbearable. The attacks start suddenly on stairs or walking less than a block, and sexual relations are impossible. Generally, the pain stops at once on rest but may last 5 or 10 minutes. The arms feel as though corded above the elbows but the hands never get cold. Cold air may precipitate an attack.

This sense of constriction in the arms, I believe, is a referred sensation from coronary spasm. The daily frequency of the attacks and the severe pain in both arms indicate a severe and dangerous type of angina. He has no arthritis, neuritis or other source of pain.

TYPICAL CARDIOPHOBIA

CASE II. Oil operator, age 39 years. Has attacks of pain generally starting high up to the left of the sternum. Sometimes lower, near the epigastrium, going to the axilla and shoulder and down the arms to the elbow. It is generally a steady ache like rheumatism and may continue for six hours. It sometimes starts suddenly and stops in 10 or 15 minutes on resting. The pain has never been unbearable. Never brought on by walking, climbing stairs or sexual indulgence.

He apparently fears angina pectoris because a brother, aged 39, who had "rheumatism" in his left arm, died suddenly, after being butted by a bull over the heart, with symptoms like angina. Unfortunately, his fears have been shared by his medical attendants who have told him that he might drop dead at any time. He is steadily getting worse and has frequent daily attacks.

Every pain following the pattern of angina is not due to the heart. His attacks last too long for angina and are not precipitated by exercise. The whole picture is that of a fear complex and when he is convinced that he has nothing to be afraid of, he will be better. I only told him this after a very complete history and physical examination including an electrocardiogram and fluoroscopy, all showing normal conditions. Exactly what may happen at some future date is impossible to say.

RAPIDLY FATAL ANGINA

CASE III. Aged 44. Bridge construction foreman. Was seen 11/14/38. In good health until three weeks ago when he began having spells of hurting in the mid-chest going up under the sternum to Adam's apple where it feels like a lick, the pain being so severe. He almost loses consciousness and gets wet with sweat. In the day it is brought on by exertion but it is just as bad when it awakens him at night. For two nights it recurred all night at 20 or 30 minute intervals and was continuous for nearly an hour. Nitroglycerin generally gave immediate relief. Pain is not worse right after eating but only after three hours or more. Very heavy eater. Was better on a very restricted diet but would return to his old habits with prompt relapse.

He had syphilis 20 years ago but was continuously and thoroughly treated for three years and all tests became negative.

X-ray examination showed an aorta of normal width and density and the EKG was normal.

11/26/38, he came home jovial and well, had a sudden attack almost immediately, fell to the floor

in a convulsion and died instantly. Probably from ventricular fibrillation.

Here we have a plain picture of angina uncomplicated by other symptoms. The pain only getting worse three hours after eating may be easily explained by food allergy, a delayed reaction. Sweating is an important differential symptom because it points definitely to visceral nerve pain. Syphilis cannot be excluded as a cause but seems quite unlikely because x-ray showed a normal aorta, but unfortunately, the root of the aorta is always hidden by the auricles and is hard to visualize on x-ray examination.

The description of the pain as like a blow or lick sounds queer, but this is the language of his occupation. I believe that this man's life might have been saved by strict control as to rest and diet.

ANGINA, ATYPICAL

CASE IV. A nurse. Aged 66. Was seen 8 years ago and several times later. She complained of attacks of pain right in the heart and mid-chest, going to the left shoulder and down the arm. The pain starts as quick as one can snap a finger and is so bad that she cannot move, speak or breathe. It feels like cutting with a knife. It commonly starts when sweeping or washing dishes. She has had similar attacks for 30 years, at varying intervals. They generally come when she is over-worked and tired out. The duration is generally but a few minutes.

Are the attacks true angina pectoris?

Her blood pressure is 170/80. The pain of angina is occasionally described as cutting. Her attacks began at 36 years of age. This is about 10 years early for a woman, and women have it only one-third as often as men. However, of 145 cases carefully studied there were 5 under 40 and of these, two were women.

Naturally, housework, such as washing dishes, kneading bread, sweeping and the like, are quite commonly mentioned as bringing on the pain in women. The long duration of her angina throws doubt on the diagnosis. She is not hysterical, has no neuritis, arthritis or other source of pain. Certainly at her age it would be hazardous to say her attacks are not angina.

"MOCK" ANGINA

CASE V. Mrs. X. Aged 34. Seen in 1930 and for several years subsequently. Following worry, fright or overwork she has spells with her heart which begin with a pain as though she has been hit in the epigastrium. This pain goes up over the heart and to the left shoulder and midscapular region and down the whole left arm. The pain seems to be inside the chest. The first symptoms is lack of air and the chest feels as though it would burst. After the attacks, she vomits. So far we have a fairly good picture of angina pectoris and she has been told that she has genuine angina pectoris and that she might die if she moves when the pain is on.

But this is not the whole story. She says she is a nervous wreck and has dizzy and fainting spells and in some of her heart attacks she is unconscious for hours. At one time she had an abdominal pain and other symptoms and was examined thoroughly including x-ray, and was told that she had gastric ulcer, gallstones, fixation of the appendix, TB of the fallopean tubes and that she would need several operations to cure her. It finally was found that she was three months pregnant, and with that explanation, all her symptoms disappeared.

Comment: The physician was a well trained heart man in charge of the heart work in a large hospital. So I think this case may be of some general interest. In this case there are other findings that throw doubt on such a diagnosis, at least so far as the seriousness of the situation is concerned. Here coma followed the attacks and all the attacks do not follow the same pattern. Coma is not a symptom of true angina, neither are fainting or dizziness. In angina all the attacks as a rule follow quite closely the same pattern. Fear or strong emotion in themselves react violently on the sympathetic system, with at times heart symptoms simulating angina. None of my cases of this type in women have died in an attack. This woman's attacks belong to the type where fear comes first and then the angina-like syndrome follows. Her first symptoms is lack of air which indicates fear. They are a class to themselves and cannot be fitted into the text-book definition of true Heberden angina. Perhaps some day they will form a special group all to themselves. I always give a good prognosis in this group.

ANGINAL ATTACKS FOLLOWED BY ACUTE CORONARY OBSTRUCTION

CASE VI. An intelligent woman of 54 years, while working in her yard was suddenly seized with excruciating pain in the epigastrium, going up under the sternum in the midchest. The pain felt deep in and like a burning with gasoline. There was a sense of constriction. She fell to the ground and had to be carried into the house. On account of her long history of queer spells and complaints, she was thought to be hysterical. Repeated injections of morphine gave no relief. There was persistent and uncontrollable vomiting and intestinal obstruction was suspected. Duodenal drainage was instituted and the fluid returned was a little bit bloody. There was slight fever. After about 10 days, she was much better and returned home. In a few days she complained of severe pain in her left leg, but on account of her previous long history of a multiplicity of mysterious symptoms it was given little attention. Later the leg became gangrenous and amputation was done.

Her dramatic description of the pain in her chest was not fanciful, as I can testify from personal experience. There was a sense of severe constriction and the pain was persistent. These facts and the embolism that followed point definitely to acute coronary obstruction which was confirmed by an electrocardiogram. She had the best of attendants and consultants and there can be no criticism. The only lesson is that in the fog and confusion of a multiplicity of functional complaints, there may

be hidden a serious heart attack. She had anginal attacks before her coronary obstruction and still has them.

FEAR COMPLEX

CASE VII. An intelligent and sensible woman, aged 54, was seen in November, 1937. She had recently been playing in a golf tournament for 5 days, following which she had heart attacks on the four nights following a golf tournament. The first attack came on suddenly with pain in the epigastrium and then around under the left breast and finally to the axilla and down the left arm on the ulnar side. There was a good deal of dyspnoea which indicates fear. Two hypodermics in an hour did not quiet her. In the three other attacks, all at night, the pain went from the epigastrium around under the left breast and to back and under the shoulder blade. Nitroglycerin did no good. One attack lasted three hours. Blood pressure 112/80. She was in a great state of fear because a sister had recently died suddenly of a heart attack. No pain was ever brought on by effort.

She had arthritis a few months before these heart attacks. She had a basal metabolism test which was low and her arthritis got better on thyroid. She is allergic to many foods and feels better when on a limited diet.

In a woman of 54, angina must be seriously considered. But the pain lasted too long, once up to three hours and never less than an hour. There was no coronary obstruction because she always felt well next day. Pain that starts in the epigastrium and goes around under the breast and to the back, is due to spinal root irritation. Pain under the shoulder blade does not go with angina. The only back pain that sometimes is present in angina is said to be confined to a narrow strip over the second and third and fourth dorsal spines. The fact that in one attack the pain went to the axilla and down the ulnar side of the left arm suggests angina. But is to be noted that the pain did not go up the sternal line but around under the left breast.

Fear alone will cause such a picture, and she admits great fear as the precipitating cause of her attacks. On my record I have a question mark following angina. It hardly makes good sense to make a diagnosis of angina in her case when we consider the whole picture. I gave her vitamin B and no more attacks have occurred. Assurance that it was not angina alone might have done as well.

COMMENT

Angina pectoris rests upon definite pathology, coronary sclerosis and sensitization of the heart area whence comes the pain. If acute coronary obstruction supervenes it takes on the same pain pattern as did the angina. Afterward the angina may never return because the irritable focus from which it arose has been destroyed. True angina speaks plainly the language of the heart and with it referred pain plays only a minor role. Fear is rarely a symptom and rarely starts the attack but only appears after the pain is so severe as to excite alarm.

In "mock" angina it is just the contrary. There is no or very little cardiac pathology. Fear and expectant attention dominate the scene. There is always some disturbance outside the heart that excites fear. It may be intercostal neuralgia, the pain of spinal arthritis, plural adhesions, bursitis, myalgia or herpes zoster that are distorted by an overwrought imagination as coming from the heart. At times the masquerade follows so closely the heart patter of angina as to be quite deceptive. That is why a careful history is so important as was brought out in cases just recited. But again let me repeat, no fear to start the attack, no masquerade of other ailments as angina.

Roberts-Banner Bldg.

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Case Specific Bacterial Vaccines

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I present a simple method of preparing vaccines specific for most of the organisms to the protein of which a person is sensitive. Vaccines of this type have been used by me on a considerable number of patients during the last 10 years. That they have efficacy seems to me established.

Since Sir Almroth E. Wright's discovery of opsonins and the administration of vaccines according to the opsonic index, I have been impressed that vaccine administration is sometimes of benefit; but often is of no apparent effect and occasionally even markedly harmful. The fact that inoculations of dead bacteria do protect against certain diseases such as typhoid has been a basis for the assumption that they generally should have therapeutic value. Many reports have tended to establish the correctness of this theory. I read some 30 years ago of a case of "hay fever" supposedly cured by a bacterial vaccine. This report has been a stimulus to me for using vaccines in a variety of diseases these many years.

The tragic results from tuberculin as first used has ever suggested that vaccines are a two-edged sword—potentially harmful as well as useful. I have used tuberculin for many years and seemingly done much good with it.

Presented to the St. Louis Medical Society.

CASE REPORT

A case which had a tremendous influence in keeping me using vaccines in spite of numerous therapeutic failures from them was a young woman with retinitis—and a prognosis of blindness despite expert care. I took cultures from all available places of her body where bacteria might grow and from which their products might be absorbed. Many kinds of bacteria were grown and incorporated in a vaccine. This was before the day of skin-testing for sensitiveness except for the making of tuberculin tests.

The first small dose of the vaccine aggravated her retinitis—reducing her vision. The vision was a delicate index of the effects of the vaccine. Too large a dose reduced the vision; too small a dose was ineffective and the proper one plainly was beneficial. Gradually ascending doses of the properly diluted vaccine brought about a permanent cure; at least she has had no similar trouble during the past 18 years. This was undoubtedly a retinitis largely due to sensitiveness to bacterial protein, though relatively little of clinical allergy was known at that time and was not considered in this case.

PROTEIN SENSITIZATION

In the use of vaccine sensitization to bacterial proteins and their relation to immunity must be considered.

It has been shown that animals desensitized to pneumococci protein required larger doses of the germs to kill them than did similar animals not desensitized. The same has been demonstrated in regard to tuberculosis and tuberculin sensitiveness.

Therefore, it would seem that administration of vaccines should be controlled by some test that indicates how sensitive the recipient is to them.

Certain physicians have argued that bacterial protein hypersensitiveness does not exist or causes little or no serious trouble. Three observations on food sensitiveness apparently applicable to bacteria indicate that human tissues become sensitive to bacterial proteins.

(1) Vegetable proteins are more prone, other factors being equal, of causing sensitizations than are animal proteins.

(2) If one eats excessive amounts of a protein, other factors being equal, he is more prone to become sensitive to it than if he eats sparingly and rarely of it.

(3) Food proteins which have undergone deterioration by autolysis fermentation or bacterial action, though far from being spoiled in the ordinary use of the word, are more prone, other factors being equal, to cause sensitizations than are the same food proteins in prime condition.

Bacteria belong to the vegetable kingdom; they are present in the human body from shortly after the beginning of extra-uterine existence, and they are often pocketed so that the protein has an excellent chance to undergo decomposition and be absorbed. All persons then have the best of opportunity to become sensitive to various bacterial proteins. During the course of one's life he acquires many types of bacteria; perhaps they even remain as permanent guests. Cetrainly the sensitiveness to many bacteria remains indefinitely in many persons.

I recall one woman who had continuous asthma for 25 years. She was skin tested to many proteins and reacted not even suggestively to any except pertussis protein. Pertussis vaccine in too large dosages always aggravated her asthma and in small doses gradually increased over many months effected a cure.

AUTHOR'S THEORY AND EXPERIENCE

I offer the theory that bacteria once acquired may long remain with one after the disease they originally caused is overcome. The bacteria may undergo evolutionary changes so as to appear differently than they were originally. They probably are always much attenuated as far as producing the specific disease is concerned and may not be disease carriers. I presume they may be transferred to persons whose tissue may lack the immunity to keep them from producing their specific diseases. In the main, however, the bacteria I believe do little harm except to produce sensitiveness and the resultant asthma, eczema, rhinitis, indigestion, arthritis, etc.

It would seem, on first thought, that the best method of obtaining the bacteria which are causing trouble in a person's body, would be to make autogenous cultures from all places where bacteria exist. There are several objections to this procedure. In the first place the expense places it out of reach of many persons; then, too, some of the organisms do not grow readily upon the ordinary culture media and hence the essential germs may not be grown; those germs which are grown from a pocket may be so superficial that they are not the germs, even of that place, which cause the trouble. My first effort to find the organisms to which a person was sensitive was to make autogenous vaccines and find to which of them a patient was sensitive. This was impractical also because when a vaccine was used up, a fresh supply could not be obtained.

Stock vaccines were next tried and generally have been found satisfactory. I now skin-test a patient against 1-10 dilutions of 25 or more vaccines of common organisms using two or three vaccines of each organism, no two from the same manufacturer. The tests consist of intradermal injections. Readings are made 30 minutes, 24 hours and perhaps 48 and 72 hours after the injections are given. The immediate reaction is a hive and blushing of the skin area about the injection, and the delayed reaction is redness and swelling.

From each of the patient's reactors .05 to 2.0 c.c. is transferred into a 15 to 20 c.c. of sterile normal saline. If a patient has been tested against house dusts, animal danders, orris root, pollens, etc., .05 c.c. of each of these may be added to the bacterial vaccine or they may be made up separately in one or more bottles as seems best. In the event that desired results are not obtained from these, autogenous vaccines are made; the patient is skin-tested to them and the reacters are added to the mixture of stock vaccines.

Treatment is begun by administering .05 c.c. of

the prepared vaccine or vaccines intra- and hypodermally usually into several sites on the forearm or lower thigh.

The injections are made partially intradermally in order to know the severity of the reactions. The forearm or lower thigh is selected for the injections to permit the toxin to travel a considerable area of lymphatics before reaching the blood stream. The theory is that a person may have bacterial foci already discharging too much toxin similar to that in the vaccine, into other lymphatics and probably also into the blood stream. Therefore, the tissues with rich blood supply are already likely to have had too much bacterial toxin.

I use this type of vaccine in various sensitizations and in persons with chronic bacterial disease who are not sufficiently benefited by the usual treatments. I recognize the hazard of reporting clinical results—especially in attributing them to certain features of a multiple therapy. The clinician must rely upon impressions more than upon statistical data. When the impressions of physicians and patients agree, the conclusion is probably safe. Most persons react to several of the stock vaccines. Occasionally the reactions are severe, giving a pronounced lymphangitis and occasionally lymphadenitis. The treatment dosage may be rapidly increased in some persons while in others great caution and much time is required to get the patients able to take even small doses without harm. In some cases, it has been practically impossible to increase the dose above a minimum amount. My presumption has been that such cases have hidden foci of infection.

The best results seem to have been in children with various sensitization states. I use this vaccine in asthma, bronchitis, rhinitis, chronic coughs, rheumatism, deafness, and other conditions resistant to ordinary treatment. I do not know that its use has benefited arthritis or rheumatism. Excellent results have been obtained in asthma, urticaria, neuralgia, rhinitis, deafness, and chronic coughs. In combination with diet control it seems important in the treatment of most cases of asthma. One case of urticaria was slightly improved by eliminating from her diet all skin-reacting foods, and was cured, apparently by her vaccine. Another case of chronic duodenal ulcer was definitely improved by diet based on skin tests; the results from the vaccine, however, were more striking. Although I had no thought of its being a preventitive vaccine for colds, most patients, if not all who have been given it for any length of time, have developed an immunity to colds not previously possessed by them. I could report many cases with seemingly good results, but I contend that it should be the seeming rationality and its specific method of preparation and use rather than my, and my patients, impressions which should recommend it.

SUMMARY

I report a method of preparing vaccines—specific for each case. One to 10 dilutions of 20 to 30 ordinary stock vaccines are used for skin testing. A small amount of each reactor is added to normal saline. Small doses of this mixture gradually increased over long periods are considered by me important in routine treatment of allergic conditions and occasionally achieve striking results, even in preventing colds.

Professional Bldg.

Gastroscopy as a Diagnostic Procedure

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FOR many years the medical profession has attempted to develop a method which would allow direct inspection of the interior of the stomach. As far back as 1868 Kussmaul[1] made the first attempt. The result of this attempt was disappointing because the electric lamp had not yet been invented and hence he could not provide adequate illumination. In 1881 Mikulicz[2] performed what was probably the first successful gastroscopy. Because of the optical difficulties which the procedure presented, together with the dangers involved in the use of the instrument, the development of gastroscopic observation was slow. With the inauguration of roentgenology as a proved diagnostic procedure, there was undoubtedly less stimulus to overcome the difficulties which practical and successful gastroscopic examinations demanded. However, because of the constant desire on the part of exacting workers to actually see the part of the anatomy involved in pathological processes, we find that at intervals improvements on the gastroscope were attempted. In 1911 Sussman[3] used a combined flexible and rigid instrument, and in 1922 Schindler used a rigid gastroscope which allowed excellent visualization of much of the interior of the stomach. It was not accepted as a routine procedure because, being a rigid instrument, the pyloric part of the stomach was often not visible. Further, because of its being a rigid tube, the procedure was not without danger, and hence the contraindications were many. The present perfected flexible gastroscope was introduced in 1932 by Wolf and Schindler. It has the diameter of an Ewald stomach tube through the flexible portion and is 8.5 mm. in diameter in the upper rigid part. It is 77 cm. long, including the rubber finger. The entire flexible portion is covered by two rubber tubes which form the channel through which air is injected, emerging through three small holes in the distal part. The optical system contains 26 hand-ground lenses. The objective may be had with the 50 and 85-degree angle of vision. The general use of this instrument was rather slow in its development in this country, but

it seems that it is now definitely assured of its proper place in the diagnostic armamentarium of the medical profession.

The examination may be carried out in the examiner's office; the instrumentation is not difficult, but correct interpretation is probably more difficult than in any other endoscopic procedure, and calls for adequate training in the study of normal as well as abnormal stomachs before the examiner's interpretation becomes of any great value.

INDICATIONS AND CONTRAINDICATIONS

The contraindications to the procedure seem to be constantly becoming less important, so that practically the only ones which the author observes are aneurysm, obstruction of the esophagus, and esophageal varices. If an Ewald stomach tube can be passed without difficulty it may be assumed that the gastroscope also can be introduced safely. Indication for gastroscopic examination are too numerous to mention in detail, but the principal ones shall be dealt with quite fully. Cases which have shown nothing abnormal by x-ray and which are apt to be considered by the physician to be one of that great group consisting of neurotics or constitutional inadequates may greatly profit by gastroscopic examination. Many of the cases may be suffering from one of the various types of chronic gastritis. Gastroscopy is virtually the only means of diagnosing this distressing condition since radiologists in general agree with Berg,[3] who stated at the fifth International Congress of Radiology in Chicago that even careful study of the mucosal relief would often fail to indicate the presence of chronic gastritis. This disease entity has previously been a very indefinite thing. Many pathologists at various times thought they had found sections of gastric mucosa which demonstrated gastritic changes. In most instances, however, it was found to have been due to post mortem changes. Knud Faber[4] was the first to inject a 10 per cent solution of formalin directly into the abdominal cavity immediately following death, thus fixing the tissues and establishing the histological entity of gastritis. Gastroscopy, together with pathological specimen study, has shown that gastritis is probably the most frequent cause of gastric disturbance. Henning[5] stated that because of the frequency of gastritis he believes no diagnostic work-up of the stomach to be complete without gastroscopic examination, and Gutzeit[6] has stated that in his clinic gastritis was observed twelve times as frequently as was duodenal ulcer.

Anyone who has followed patients who have undergone gastric surgery is familiar with the fact that frequently the patient is not relieved from distress, but, on the contrary, in some instances, has even more than before. In a gastroscopic study of this problem we found that the four principal morphological changes which may cause postoperative trouble following gastroenterostomy or gastric resection were the following:[7]

1. Recurrent or gastrojejunal ulcer. This condition was long thought to be the only complication in the postoperative stomach.
2. Chronic gastritis. This is now thought to be by far the most frequent cause.
3. Erosions and irritation caused by silk sutures remaining from operation and which have cut through the mucous membrane.
4. Carcinoma which develops at the stoma; very rare. Gastroscopists agree that chronic gastritis is a frequent and important cause of postoperative trouble, and thus gastroscopy becomes important not only in the differential diagnosis but also in an objective study of the conditions which will allow more intelligent management of the case.

VALUE OF GASTROSCOPY

It must be conceded that direct visual control of a lesion of the stomach is desirable. Since there is the possibility of a malignant change developing from gastric lesions the importance of direct inspection in the stomach may be greater than in some other cases. Although gastroscopy is probably not as valuable in the diagnosis of gastric ulcer as is x-ray—each method has its advantages in this respect—both Schindler[8] and Gutzeit have shown that healing of an ulcer can be better demonstrated by gastroscopy than by x-ray; that complete epitheliazation may require as long as two months after refined x-ray compression has failed to visualize any abnormality. These facts coupled with the knowledge that gastroscopy alone can study the progress of gastritis makes it clear that gastroscopy is important in studying the progress of treatment as well as being able to objectively study the disease process. It is generally agreed today that gastritis has a definite causal relationship to carcinoma. Hurst[9] has shown that anacidity was present in 75% of gastric cancer for years before the cancer developed. Two cases[10] were recently reported from the Mayo Clinic in which carcinoma developed from previously proved hypertrophic gastritis. In a report of these cases the following statement is made: "The conception that chronic gastritis is the soil in which cancer develops in a large percentage of cases, if finally accepted, will influence greatly the methods used in the prophylaxis and early diagnosis of cancer."

Gastroscopy is of value in the differential diagnosis of gastric ulcer and carcinoma. While the accuracy of roentgenology is high, it is admitted that doubt exists concerning the true nature of many of these lesions, and it is only reasonable to feel that the more one knows concerning a given lesion the more accurate is his diagnosis likely to be. At the International Congress of Gastro-enterology held in Paris in September, 1937, the question for consideration was early diagnosis of gastric cancer. Many speakers were enthusiastic about the value of gastroscopic examination in this respect. Schindler[11] states that there is reason to believe that a differential diagnosis between a benign and a malignant ulcer can be made much more easily by gastroscopy than by any other procedure. Other gastroscopists are not so sure that a correct differential diagnosis can be made in

such a high percentage of cases (Moutier, Rodger, Henning, Fredrich[5]). A controlled series of cases[7] for differential diagnosis was studied by Schindler and the author in 1936 with the conclusion that in this particular series gastroscopic examination gave more correct and detailed information concerning differential diagnosis than did roentgen examination. Very recently Schindler and Gold[12] have published a series of cases which again show this to be true. More controlled work will eventually determine the exact value of gastroscopy in bifferential diagnosis of benign and malignant lesions, but that it is of value can at this time be safely stated.

Gastroscopy offers valuable information concerning the operability of gastric lesions and thus tends to reduce the number of needless exploratory operations. It is reasonable to suppose that surgeons would welcome a method which would give the needed information without the operative risk. It is possible that gastroscopy will, to a large extent, fill this need. Nine[7] cases were studied in which the question of operability arose. The accuracy of gastroscopic examination in these cases in demonstrating the operability of the lesion was not only greater than was x-ray, but was, in fact, correct in every instance.

Undetermined bleeding points of the gastro-intestinal tract may have their origin in the stomach and may be found by gastroscopy when x-ray may have failed to visualize the cause. We have seen bleeding result from a lymphosarcoma unrecognized by x-ray, and in many cases have seen gastritis with hemorrhagic erosions to have been the cause. In addition to determining the source of the bleeding, adequate treatment may be initiated early in cases of hemorrhagic erosions, and since their relation to the etiology of ulcer may be close, it is probable that potential cases of ulcer may be aborted.[13]

In addition to the indications outlined we must consider its potential value in investigative work of stomach diseases in general. Since it allows direct visual study we may hope to arrive at an understanding of disease processes which will ultimately prove to be of great practical value.

SUMMARY

Gastroscopy is a safe, practical procedure for use in gastric diagnosis in the hands of one who has had adequate training in the correct interpretation of normal and subnormal stomachs. In no way does it replace or make less essential roentgen examination of the stomach; the two procedures supplement one another. The main indications for gastroscopy include those cases in which x-ray and other diagnostic procedures are negative, but in which symptoms persist. Gastritis which is seldom visualized by x-ray may be present or a gastric lesion may be seen which x-ray failed to show. Cases which have persisting distress after surgery should be gastroscoped. Gastroscopy offers valuable information concerning the differential diagnosis between benign and malignant lesions of the stomach. Operability of a gastric lesion may be determined more correctly than by x-ray and certainly more correctly by x-ray and gastroscopy than by either procedure alone. Cases suspected of having gastro-intestinal bleeding, the origin of which has not been found, should be gastroscoped, since lesions may be found which may previously have been missed by x-ray. Hemorrhagic erosions which are never visualized by x-ray may also be seen. Finally, we may add that the intimate objective study which direct visualization of the interior of the stomach allows has great potential value in the study of disease processes which may eventually result in a better understanding, and thus more correct management, of these diseases.

Mills Bldg.

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El Paso
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A PROUDER PROFESSION

Obituary columns sometimes carry a note of inspiration to the living—not often do they comprise a full code of life. Read this excerpt from the Journal of the American Medical Association, issue of August 5, 1939:

Dr. William J. Mayo wrote, in part:

"Our father recognized certain definite social obligations. He believed that any man who had better opportunity than others; greater strength of mind, body, or character, owed something to those who had not been so provided; that is, that the important thing in life was not to accomplish for oneself alone, but for each to carry his share of collective responsibility. . . . The fund which we had built up and which had grown far beyond our expectations had come from the sick, and we believed that it ought to return to the sick in the form of advanced medical education, which would develop better-trained physicians, and to research to reduce the amount of sickness. . . . The people's money, of which we have been the moral custodians, is being irrevocably returned to the people from whom it came. . . . The practice of medicine in Rochester is carried on in the same manner as by other members of the regular medical profession throughout the state and nation. All classes of patients, without regard to race or creed, social or financial standing, receive necessary care without discrimination. . ."

These words reflect the great character, the human kindliness, the profound human sympathy that were the part of Dr. William James Mayo. It has been said that opportunity and great occasions make great men. Exception to this rule is present in the lives of Drs. William J. and Charles H. Mayo. They made a small village into one of the most notable medical centers of the world wholly through a genius for surgery and for medical leadership. Throughout their careers they devoted themselves to the advancement of scientific medicine and of the medical profession which they served so nobly and which gloried so greatly in their achievements.

In 1906, when Dr. William J. Mayo read his presidential address to the American Medical Association, he forecast and considered some of the great problems that concern medical practice today. He attacked abuses of medical care by public service corporations and the abuse of medical charity by those able to pay. He condemned all attempts by those not trained in the science and art of medicine to dominate its functions. To the very end he contended for this point of view. And in a not written just a few days before his death, he urged continued work for the advancement and stabilization of medical science and the traditions of medical practice.

All the world pauses in the midst of its turmoil and stress to give him honor and to pay him in his death the tribute that is so justly his due—a great physician, a superb surgeon, a magnificent leader, a beloved man!

Every physician in America should be more proud than ever of his high calling. A mistress that begets sons of the calibre of William and Charles Mayo is truly worthy of worship.

HALF-MEASURES

Public health reforms in a democracy are not very successful unless a large section of public opinion demands them. Think now of certain areas in the United States where smallpox is on the increase. Public opinion in those places has hampered instead of encouraged the medical authorities in their campaign of compulsory, universal vaccination. When we speak herein of public opinion we do not necessarily mean the militant convictions of a majority of the population. Realism directs that we understand the term to mean more often the articulate demands of small, compactly-led pressure groups. It often happens that a smartly directed minority of a minority is able to force its beliefs into the law, thereby making its own ideas ostensibly the convictions and will of the population at large. In a democracy that is the way things are done. If the ideas of the minority prove to be good in the experience of the majority they are adopted and retained by all. If these ideas come into increasing conflict with what the slowly-mobilized majority wishes, they are modified or discarded finally. This, too, is a democracy at work. All of which leads to the main thesis of the topic at hand.

Some time ago, a certain section of public opinion acquiescing, the United States Public Health Service inaugurated a highly publicized campaign against syphilis and gonorrhea. The usual propaganda weapons were brought into the fray—the daily press, the lay magazines, posters, speakers, preachers, the radio. Well and good, approves the man of medicine. It's pleasing to the physician to view the awakened interest of the public in the fight against these dread scourges. The physician approves because it is in his nature to hate all disease, because he regards it his paramount task to keep

his people well. But a growing section of opinion, both medical and lay, is asking if the venereal disease problem is really being faced squarely. "Get early treatment", "Recognize these early signs"—so say the public health workers. The Public Health Service has usually been more concerned with the prevention of disease than its cure. Why not in this instance? What better way to stamp out gonorrhea and syphilis than by preventing their occurrence?

Men and women still indulge in sexual intercourse. Much of this activity is extra-marital. From the "two-bit chippie" to the twenty-five dollar "call girl" to the "charity stuff" men seek an expression and gratification of the male urge. And here, in the courtesan's couch, is where most of the cases of venereal diseases are contracted. Now, it is manifestly impossible to legislate men out of women's beds. And it is likewise foolish to think that all possible is being done to stamp out venereal disease by attacking it after it has been contracted. So reason must say that its prevention must be accomplished. Since women won't keep their legs crossed, and since men will dally in the romantic clutches of Circe, why not teach them how to avoid the contraction of these venereal diseases?

Men in the Army and the Navy are taught the uses of the rubber condom, the virtues of calomel ointment, the desirability of plain hot water and soap post-dalliance. Now that it is fashionable to be in the know regarding venereal diseases and treatment thereof, why not complete the course in sex hygiene now being given the public? The intelligent use of mechanical and chemical prophylactic modalities would forthwith reduce the venereal disease rate immensely, and more important from an economic basis, put out the fire before it begins.

But a few well-organized minority pressure groups declare that wide dissemination of knowledge of prophylactics might lower the morals of the youth of the land, by presenting them gratis with the knowledge and means of avoiding pregnancy as well as disease in their relations sexually. Most any honest man can tell you that it isn't fear of anything whatsoever that leads the girls to say no. It happens rather to be something in their home training that helps them cool the hot desires of the moment. If anyone thinks that fear of pregnancy restrains the young unmarried girl from illicit intercourse, let him ponder the high rate of illegitimate births in this country, together with the extremely high number of criminal abortions done annually. No, an informed populace is not likely to use knowledge against its own interests.

Just as soon as the entire public awakens to the half-measures being employed in the battle against venereal disease today, just so surely there will be an undeniable demand for the completion of the program, i. e., the teaching of preventive methods. When that day comes, the wishful idealism of minorities must cease to be the law of the people. The medical profession must here, as elsewhere, follow the public demand.

I'M A DOCTOR

I fit glasses in a jewelry store,
I'm a doctor.
I make speeches by the score,
I'm a doctor.
I preach sermons that folks adore,
I'm a doctor.
I rub vertebrae that are awful sore,
I'm a doctor.
I teach philosophy never heard before,
I'm a doctor.
I treat corns that folks abhor,
I'm a doctor.
But when any illness threatens me
I tell the good wife to call an M. D.[1]

The antics of the lesser clutchers on the fringes of medicine's skirts often provide amusement, which would be well enough if certain dangers were not inherent in these caperings.

Not long ago a sharp-tongued mother gave a local glass-fitter a twisty moment. The good "doctor" had been treating the daughter's inflamed eye with boric acid solution, it being capable of curing 90% of all eye troubles, he had assured the mother. The eye became worse, and one day the advice was given that a physician had better be consulted. "But you advertise yourself as a doctor!" says Mother. "Well, er, you see, etc., etc." And then the blistering our friend took! The daughter's iritis cleared up finally.

Then there was the case last year of one of the flowers of El Paso's quackdom being called into "consultation" regarding the woman with one pupil fixed and widely dilated. He labored his head and informed the family that a vertebra in the lower neck controlled the eyes, and since it was "subluxated" (delicious word), it would take a course of a few months' treatment to restore the peripatetic bonelet, thus fiixng the eye. When the patient's money ran out she decided to visit her family physician. He is still treating her cerebrospinal syphilis on credit. And the chiro quack just recently ran an advertisement in the daily papers about vision and eyes. Perhaps he learned something at that, from the case cited.

We wouldn't have liked being in the embarrassing predicament of another local claimer who came to the scene of a rather frightful automobile smashup, and was pressed into service because of the insignia on his car resembling very closely that indicating a physician. After he fainted under the stimulus of the spilled blood, he had to falter, "I ain't no doctor, I'll try to get one in town."

There must be moments in the life of every pretender when he would give a large purse of gold to be quits of a situation where he is exposed for what he is. So perhaps the life of the deceiver isn't completely spent in a bed of thornless posies.

1. Journal Ark. Med. Soc.

Special Section

Arizona State Medical Association

PRESTON T. BROWN, M. D., *Associate Editor*
403 Professional Bldg., Phoenix, Arizona

The President's Column

LET'S WORK TOGETHER

THERE is herewith inaugurated the monthly issuance of the *"PRESIDENT'S COLUMN"* for the Arizona Section of *Southwestern Medicine*. This is something new for the *Association* in order to afford the *President* a medium for reaching the membership more often.

Members of the *Association* do not follow announcements and editorials in *The Journal* as closely as they should. It is hoped that the *President's Column* will aid in correcting this.

In a large measure the County Societies represent a cross section of the Association. To them belongs a good deal of credit for moulding the policies of the Association.

At times it seems that the County Societies are inclined to let up and lose interest in affairs of the parent society. Is it because the parent society has been able to cope with important medical problems efficiently, thereby creating a feeling of indifferent acquiescence? Is it because the County Societies are not aware of all the activities that are going on within the parent society? Is it because the County Medical Societies have too many local problems of their own which detract from interest in the Association? Let's find the answer and work together!

This is YOUR Association. The roster of membership is the largest in our history. Exercise your privileges as a member. Aid YOUR Association. This is part of YOUR duty as a doctor.

In all sincerity,

Thos. S. Smith M.D.

President, Arizona State Medical Association.

COMMUNICATIONS

Sir:

We have recently received a letter from Dr. Geo. W. Cox, Texas State Health Officer, regarding the use of vaccine for protection against yellow fever. Dr. Cox states:

"We are in receipt of a letter from the United States Public Health Service to the effect that vaccine is now available for protection against yellow fever.

Due to the fact that yellow fever is endemic in certain portions of South America, and with the increased airplane traffic it would not be unreasonable to expect an introduction of yellow fever into Texas.

This vaccine is available to be used in immunizing physicians, nurses, and other health workers in order that there may be an immunized health personnel able to take care of those who might have yellow fever.

The vaccine is administered in single injections, and in a great number of cases causes very little or no discomfort. In some cases you may expect a slight rise in temperature with some malaise on the seventh day.

I wish you would take this matter up with your County Medical Society and advise me the number of doses you will be able to use for your physicians, nurses, and health workers. When this information is received we will make a request for the vaccine and mail same to you to be administered by you or some physician who is a member of your County Medical Society."

Yours very truly,

JAMES J. GORMAN, M. D.,
President El Paso County
Medical Society.

NEWS

El Paso

A regular meeting of the Tumor Clinic was held Tuesday, July 25, 1939, at 1 p.m., at City-County Hospital. The program was as follows: (1) Tumor of right breast. (2) Tumor of right eye area. (3) Tumor of tongue. (4) Tumor of jaw bone. (5) Report on adeno-carcinoma of the pancreas.

A regular meeting of the Tumor Clinic was held Tuesday, August 8, 1939, at 1 p.m., at City-County Hospital. The program was as follows: (1) Cancer of the larynx. (2) Tumor of the jaw bone. (3) Cyst of the neck. (4) Osteogenic sarcoma of left pubic bone. (5) Osteogenic sarcoma of left knee. Dr. J. W. Cathcart presided in the absence of Dr. L. M. Smith.

Dr. Milton Littell completed a post-graduate course in allergy at Harvard University this summer.

Dr. E. J. Cummins, of the El Paso Medical and Surgical Clinic, has announced the association of Dr. Norman Giere. Dr. Giere will head the department of gastro-enterology.

Drs. A. H. Black and M. P. Spearman addressed the recent convention of the West Texas Pharmaceutical Association in El Paso on "Personal Experiences with Vitamine Therapy in China" and "The Role of the Druggist in Scientific Medicine," respectively.

Dr. Lewis Breck has announced the association of Dr. Eugene W. Secord, formerly of the Mayo Clinic, in the practice of orthopedic surgery.

Dr. V. T. Webb has begun the practice of pediatrics in El Paso. Dr. Webb moved to El Paso from Arkansas.

Dr. Felix P. Miller has announced the association of Dr. Charles E. Webb in the practice of general surgery. Dr. Webb came to El Paso from John Sealey Hospital in Galveston, where he was house surgeon the past year.

A regular meeting of the Tumor Clinic was held Tuesday, August 22, 1939, at 1 p.m., at City-County Hospital. The program was as follows: (1) Carcinoma of bladder. (2) Tumor of tongue. (3) Hypernephroma. (4) Carcinoma of breast. (5) Adenoma of thyroid. (6) Tumor of breast and melanoma of back. Dr. J. W. Cathcart presided in the absence of Dr. L. M. Smith.

Dr. Wm. John Pangman has returned from a study tour of eastern clinics where he took further graduate work in plastic surgery.

MISCELLANY

CAUSES OF DIARRHOEA

(A) In Adults:

Primary diarrhoea: (1) Dietetic; (2) Constipation; (3) Changes of climate, or weather; (4) Irritants taken with food, e.g. mushrooms, mercury, arsenic, or ptomaine poisoning.

Alterations of intestinal secretion or absorption: (1), Acute and chronic dyspepsia (gastrogenous) pancreatogenous diarrhoea and cholecystitis; (2) idiopathic steatorrhoea (coeliac disease); (3) Sprue and hill diarrhoea; (4) Nervous diarrhoea.

Secondary diarrhoea (infective conditions): (1) Typhoid and paratyphoid fevers (Salmonella group); (2) Bacillary dysentery e.g. Shiga, Flexner, and Sonne infections; (3) Cholera; (4) Gaertner

and Aertrycke infections; (5) Amebiasis and amebic dysentery, balantidiasis, giardiasis, flagellate diarrhoea, coccidiosis, malarial dysentery, leishmanial dysentery; (6) Bilharziasis, fasciolopsis, heterophyes, and other worm infections.

General infections: Endocarditis, septicemia and pulmonary tuberculosis.

Diseases of intestines: (1) Carcinoma; (2) Tuberculosis; (3) Syphilis; (4) Actinomycosis; (5) Diverticulitis; (6) Chronic cicatrizing enteritis (Crohn's Disease); (7) Peritonitis; (8) Appendicitis; (9) Haemorrhoids.

Blood diseases: Henoch's and other forms of purpura.

Chronic circulatory disturbance: (1) Portal congestion; (2) Cirrhosis of liver; (3) Chronic heart and lung disease.

Toxic: (1) Hyperthyroidism (thyrotoxicosis); (2) Uraemia; (3) Lardaceous disease.

Avitaminosis: Pellagra and prepellagrous conditions.

Special types of diarrhoea: Ulcerative colitis; (2) Muco-membraneous colitis; (3) Polyposis; (4) Polypus; (5) Stercoral ulceration; (6) Foreign body in rectum.

(B) In Children:

Simple diarrhoea from chills and errors in diet;

Acute gastro-enteritis; summer diarrhoea; bacillary dysentery—Shiga, Flexner, or Sonne infection.

Amebic dysentery;

Coeliac disease;

Intussception;

Polypus.

—P. Manson-Bahr: the Dysenteric Disorders; Londan: Cascell & Co., Ltd.: 1939.

THE RELATION OF TONSILLECTOMY AND POLIOMYELITIS

The precise route by which the poliomyelitis virus enters the human organism has not been definitely established. The most commonly accepted theory is that the virus enters through the nasal mucosa along the olfactory nerves and olfactory bulb to the central nervous system. Toomey and Harman contend that the portal of entry is from the intestinal tract along the sympathetic nerve fibers to the spinal cord. Epidemiologic and laboratory studies appear to confirm the nasal theory of entry.

In 1928 Ayer reported nine cases of poliomyelitis following tonsillectomy and adenoidectomy. In 1929 Aycock and Luther reported sixteen cases of poliomyelitis occurring shortly after the removal of the tonsils. Stillerman and Fischer recently report ten cases following tonsillectomy in 1935, and three cases in 1937. The author of this article has seen two cases of poliomyelitis in which the onset occurred within a week after tonsillectomies. In the reported cases in which the onset of poliomyelitis occurred shortly after removal of tonsils the majority were characterized by bulbar involvement.

It seems apparent that trauma to the tissues of the nasopharynx disposes to the entrance of the virus into the body. Fairbrother and Hurst have demonstrated that the virus travels along the axis cylinders in the central nervous system. The nerves which supply the nasopharynx originate in the brain stem and this would seem to explain the high incidence of bulbar involvement following extirpation of the tonsils.

The frequency with which the onset of poliomyelitis follows the surgical removal of tonsils should discourage the procedure during the season when the disease occurs, and particularly when it is epidemic.—Jo. Iowa St. Med. Soc.

DOCTOR IN COURT

We medical men have to do a lot of translating in our conversations with our patients and for the most part do it very nicely, I believe, but when we get on the witness stand we seem to lose all sense of relationship, and, instead of saying that a person has an inflammation of the inner lining of the heart, we prefer to say he has an "endocarditis". Of course, this sounds rather big at first, but what idea does it convey to the jury? Or we may say osteo-myelitis for bone inflammation; arteriosclerosis, for hardening of the arteires; pneumonitis instead of pneumonia; neuritis instead of an inflammation of the nerve; meningo-encephalitis instead of inflammation of the brain and membranes. Or instead of saying the small muscle that raises the upper eyelid, we prefer to say the levator palpebrae; or, the most inexcusable of all, instead of describing a small muscle that lifts the upper lip and opens the nostril in front, we call it, one of the smallest muscles in the body, by the unfortunate name of levator labii superioris alaeque nasi, and feel perfectly satisfied that we have acquitted ourselves nicely.—Va. Med. Mo.

SYPHILIS AND PHIMOSIS

Chancres that occur under a phimotic prepuce may appear to offer a stumbling block to early diagnosis by darkfield examination. It is possible to feel, quite often, the button-like mass in the prepuce but this does not make a diagnosis. The satellite adenopathy is highly suggestive but it is not diagnostic. Since the serologic tests may be negative, dependence must be placed on the darkfield examination. To do a dorsal slit to expose the chancre is taking a great chance since considerable sloughing may occur with the resulting formation of unnecessary scar tissue.

Material for a darkfield may be obtained from one of the near-by enlarged glands. The gland to be used is held firmly between the thumb and forefinger of the left hand. Five to 10 minims of a saline solution are to be injected. A 21-gauge needle is inserted into the gland and the saline injected. Before suction is made the needle is moved around in the gland to traumatize it. Then, when suction is applied, the material entering the syringe is a mixture of saline and serum. Darkfield examination of this material is now made. This same procedure can be repeated for three successive days if nega-

tive results are encountered on the first and second examinations.

The treatment which follows the finding of spirocheta pallida works wonders as far as the healing of the chancre is concerned. When complete restitution to normal of the prepuce has occurred, circumcision should be considered.—Jour. M.A.S.A.

TESTIMONY BY OSTEOPATHS IN SUIT AGAINST M. D. IS RULED INCOMPETENT

Action of a trial court in withdrawing from the consideration of the jury the expert testimony of two osteopathic physicians in a mal-practice suit against a doctor of medicine was approved by the Court of Appeals of Lorain County in a recent decision, (O.A.R. 436). Syllabus of the Court's decision follows:

1. In an action against a physician for malpractice, the propriety of his diagnosis and treatment is to be judged by the standard which physicians of the same school of medicine, in the same or a similar locality, employ in the exercise of ordinary care, skill and diligence.

2. In an action against a physician for malpractice, the plaintiff may not, over objection, prove his case in chief by the expert opinion evidence of the defendant physician, where such defendant has been called for cross-examination under the provisions of Section 11497, General Code.

Quoting from the decision of the Court of Appeals: "The plaintiff, in his effort to establish the claimed negligent conduct of the defendant, offered as expert witnesses two doctors of the osteopathic school, each of whom testified as to the treatment which he would have accorded plaintiff had he been called to attend plaintiff.

"At the conclusion of the plaintiff's case in chief, upon motion of the defendant, all of the expert testimony of said osteopathic physicians was withdrawn from the consideration of the jury, for the reason that the evidence of said osteopaths did not indicate they possessed any knowledge whatsoever as to the standards of skill, care and diligence exercised by physicians and surgeons of the school of medicine to which the defendant belonged . . . .

"From our reading of the record in this case we find no evidence from which the jury could determine the standard of care, skill and diligence by which the defendant's conduct was to be judged . . .

"The absence of such evidence justified the trial court in directing a verdict for the defendant. We find no error in the action of the trial court in withdrawing from the consideration of the jury the expert testimony of the osteopathic physicians."

—Ohio St. Med. J.

WHY MALE BIRTHS INCREASE AFTER WAR

A theory offering an explanation for the definite increase in the proportion of male births following a long war is summarized in the July issue of Hygeia, The Health Magazine, from an article in the Statistical Bulletin of the Metropolitan Life Insurance Company.

The explanation says that when war breaks out the young male population is quickly drawn into service and that consequently the young women of the warring nations are largely prevented from bearing children, either through the absence of their husbands or because no young bachelors are at home for them to marry. With the return of the young men from the war there is a marked increase in marriages and births, and thus a large proportion of the parents are the younger adults. Since the ratio of males to females at birth is higher when the mothers are young, it is only natural that the ratio of males shows a decided rise after a war.

SINUS ROENTGENOGRAMS

Roentgen ray of the sinuses is not always dependable even when the best technic and interpretations are followed. It should be looked upon and used as a helpful laboratory aid and not as a complete diagnostic method. The reason for this is that films taken of atrophic cases of sinusitis are not unlike those taken of normal sinuses. Again there are many border-line cases that cannot be diagnosed without making use of clinical data as well. Every rhinologist should be as well versed in the interpretation of sinus films as he is in the interpretation of clinical data. Personal interpretation of sinus films correlated with case histories and clinical findings has convinced me that it is hazardous to venture a definite sinus opinion without enlisting x-ray help. Pathology of the frontal and maxillary cavities is much more readily demonstrated on sinus films than that of the ethmoids and sphenoids. Frequently the roentgen ray is worthless when a sphenoid diagnosis is concerned. However, it does give a good definition of the anatomy which is helpful if an operation is contemplated. Correct interpretation of ethmoidal films is exceedingly difficult. The exact position required, variations of the anatomical structures and the delicate pathology that may exist require unusual consideration.—Va. Med. Mo.

LENGTHY PAPERS NOT DESIRABLE

At a meeting of the Secretaries Conference, Illinois State Medical Society, a few years ago, Dr. Olin West, Secretary of the A.M.A., in discussing a paper dealing with the problems of publishing a medical journal said: "I recently heard of an incident in which a physician had written what was, in his opinion, a very splendid scientific paper, and sent it to the editor of a certain journal. The editor sent it back with a letter saying that while it contained some very excellent material, it was much too long, much too involved, and would not be read in its present form, and asked the writer to cut it down. He received in answer an insulting letter to the effect that the writer knew what he wanted to say and how to say it. Of course, he did not get very far with that. The editor told him, however, that he

was going to take the liberty of having the paper revised and would then submit it to him. He turned it over to a manuscript editor who reduced it by about half and it was then returned to the physician without any comment or any marks of identification. A telegram came back saying that this was the best paper on the subject the gentleman had ever read, adding, "You can throw mine in the waste basket." It was his own paper, properly edited, with some of his idiosyncrasies eliminated. The paper was published in its revised form and created a good deal of favorable comment.

The trials and tribulations of an editor, or any officer of any medical society, are great, as you all know.—Ill. Med. Jo.

THE NUISANCE SUIT

The American people have become insurance-minded to the highest degree. There are very few either real or anticipated catastrophies that cannot be insured against, and there are very few of the events of life in which insurance benefits cannot play a part.

The fact that indemnity insurance is so prevalent, of course, makes for litigation—litigation based on real or fancied wrongs or injury to property or person.

Your Medical Advisory Committee divides malpractice litigation, in which we are particularly interested, under three general heads:

1. That due to a genuine injury committed by the defendant in the suit, to the person of the plaintiff.

When a real injury has been committed, the suit should be settled at once. There is nothing gained by a long, expensive trial. However, the facts must not be open to question and they must plainly show the defendant guilty of the alleged wrong doing.

2. A fancied wrong committed by the defendant to the body of the plaintiff.

The case of the fancied wrongful act is usually the one brought for large amounts. Here the facts in the case do not show any just cause for action and are based solely on the hopes, not so often of injuring the reputation of the physician involved, as on the wish to obtain money from the insurance company. These cases should be fought to the limit and every recourse in the courts exhausted before damages are paid.

3. The nuisance suit brought in the hope of obtaining either a small amount of money or nullification of the account owing for professional services.

A nuisance suit is an annoying attempt to vilify the good work of a physician by one who is of unscrupulous character, not only in his dealing with medical men, but in all his dealings in business and commercial life. Indemnifying insurance companies should not too readily compromise these cases. One settled in this way leads to other "trumped up" cases—a vicious circle for which all holders of insurance pay.

Insurance should in most so-called "malpractice cases" defend, not indemnify.—Jour. M.S.M.S.

TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

Refined and Concentrated Antipneumococcic Serum, Type I-Lederle (New and Nonofficial Remedies, 1939, p. 406). This product is also marketed in packages of one vial containing 20,000 units and one vial containing 50,000 units. Lederle Laboratories, Inc., Pearl River, N. Y.

Antipneumococcic Serum, Refined and Concentrated, Type II (New and Nonofficial Remedies, 1939, p. 407). This product is also marketed in packages of one vial containing 20,000 units and one vial containing 50,000 units. Lederle Laboratories, Inc., Pearl River, N. Y.

Bivalent Antipneumococcic Serum, Refined and Concentrated (New and Nonofficial Remedies, 1939, p. 409). This product is also marketed in packages of one vial containing 20,000 units and one vial containing 50,000 units. Lederle Laboratories, Pearl River, N. Y.

Antipneumococcus Serum, Types IV and VIII, Refined and Concentrated (New and Nonofficial Remedies, 1939, p. 411). This product is also marketed in packages of one vial containing 50,000 units. Lederle Laboratories, Inc., Pearl River, N. Y.

Antipneumococcic Serum, Types V and VII, Refined and Concentrated (New and Nonofficial Remedies, 1939, p. 411). This product is also marketed in packages of one vial containing 50,000 units. Lederle Laboratories, Inc., Pearl River, N. Y.

Tetanus Toxoid, Alum Precipitated (Refined)-Gilliland (New and Nonofficial Remedies, 1939, p. 436). Marketed in packages of two 1 cc. and two 0.5 cc. vials each containing one immunization treatment and in packages of one 10 cc. vial and one 5 cc. vial each containing five immunization treatments. Gilliland Laboratories, Inc., Marietta, Pa.

Ampuls Caffeine with Sodium Benzoate, 2 cc. Each 2 cc. contains in sterile aqueous solution caffeine with sodium benzoate U. S. P. (New and Nonofficial Remedies, 1939, p. 154) 0.5 Gm. (7½ grains). Wm. S. Merrell Company, Cincinnati. (J.A.M.A., Aug. 12, 1939, p. 595.)

An "Epilepsy Cure" Fraud.—The Bureau of Investigation reports that under the trade style of the Anli Company a Mr. and Mrs. Murray A. Shaw and a Mr. and Mrs. Benjamin Margolis of New York City sold through the mails a nostrum called the "Black and White Treatment" for epilepsy. In its written "guaranty" the company declared that its treatment contained "no poisons of any kind" or "habit-forming drugs," and "will not harm man, woman or child." Whereas the concern would have the public believe that its "cure" was a new one, the potent drug in it was phenobarbital (luminal) which was introduced to the medical profession for the treatment of epilepsy as long ago as 1912. The black tablets in the treatment were reported by government chemists to consist of sucrose, starch, blue dye and 0.63 grain of phenobarbital each; the white tablets were found to contain sucrose, starch, talc and 0.70 grain of phenobarbi-

tal each. On October 29, 1938, the Post Office Department issued a fraud order debarring the Anli outfit from further use of the mails. The Post Office Department presented medical evidence to show that phenobarbital can partially suppress convulsant symptoms due to excessive excitant stimuli to the motor mechanism of the brain but that these effects are merely temporary, since the drug does not remove the cause of epileptic or other convulsive fits or attacks; that it is not recognized as having the facility to "stop completely" all epileptic attacks in persons suffering from that disease as claimed by the Anli people, nor could they honestly represent that 94 per cent of all epilepsy victims would be cured of that disease by the product in question. Although the Anli concern claimed that its treatment contained no habit-forming drugs, the Post Office report pointed out that this claim was false, as phenobarbital is definitely recognized as a potent harmful narcotic, which is habit forming. The Post Office Department pointed out that by means of fraudulent representations the Anli concern was able to charge $5 for sixty tablets containing an amount of phenobarbital that could be bought at a drug store for $1. Further, it was shown that no physicians, chemists or pharmacists were employed by the concern. (J.A.M.A., Aug. 26, 1939, p. 875.)

Bromo-Seltzer. Under the dangerous drug section of the new Federal Food, Drug and Cosmetic Act, the Food and Drug Administration had initiated action against Bromo-Seltzer. Bromo-Seltzer, which is an acetanilid-bromide preparation, is alleged by the government to be misbranded "in that it is dangerous to health and because of the failure of the labeling to reveal facts material with respect to the consequences which may result from the use of the article and the failure to bear warnings against use in those pathological conditions, or by children where its use may be dangerous to health, or against unsafe dosage, or methods, or duration of administration, in such manner and form as are necessary for the protection of users." In its answer to the charges, the Emerson Drug Company denies that Bromo-Seltzer is dangerous. It states that it has been used for many years by millions of people without injurious results. The manufacturers have lately conducted a vigorous advertising campaign in what seems to be a woefully inadequate attempt to "build up" acetanilid without pointing out dangers that arise from its indiscriminate use. To provide a front of scientific plausibility, this exploitation utilizes a number of scientific studies which seem to have little or no bearing on the fundamental objections to Bromo-Seltzer. No doubt the Food and Drug Administration will present the scientific justification for the allegations in the stipulation. The case will be a test of what may be anticipated in the way of public protection from the new drug act. (J.A.M.A., June 3, 1939, p. 2292.)

BOOK NOTES

VARICOSE VEINS. By A. Ochsner and H. Mahorner. Foreword by Rudolph Matas. Pp. 147. Illustrations 52. Cloth. The C. V. Mosby Co., St. Louis. 1939. Price $3.00

In this concisely-written and well-illustrated monograph the authors have included practically all the recent information about varicose veins. Their own extensive researches in the field are summarized. Delving into history, they credit Brodie with first describing the test which bears Trendelenburg's name, and alter the name to Brodie-Trendelenburg. Anatomy is accurately described. Pathology and physiology are considered adequately though briefly.

In discussion of etiology, the importance of pregnancy is emphasized, as demonstrated in a series of 285 patients with varicose veins studied at Tulane University. Of 247 women in this group, 62.6% were pregnant.

The comparative tourniquet test devised by the authors is presented clearly. The test is made by tying a tourniquet at various levels about a patient's thigh, observing varicosities as he walks. If maximum improvement in the veins occurs with tourniquet around the upper third of the thigh, then the only source of retrograde flow of blood is through the main opening of the saphenous into the femoral vein. If improvement is more marked with a tourniquet at lower levels, then additional incompetence of valves is present in communicating veins between deep and superficial venous systems.

Various treatments are discussed without bias. Having conducted considerable research upon the sclerosing effect of various agents used for injecting veins, the authors prefer sodium morrhuate. Following injection alone, varicosities recurred in 60% of their patients. Best results, they conclude, are obtained by simultaneous ligation and injection of the internal saphenous vein—only 16% recurrences in their series. It is perhaps safe to suggest that publication of this treatise marks a swinging from exclusive injection treatment toward more logical treatment combining surgery with injection.

Conservative treatment during pregnancy is advocated.

Technique of injection and of operative procedures is accurately described, with illustrations.

A chapter on treatment of varicose ulcers is up-to-date in recommending skin grafts for difficult cases, but allows credit to such old methods as use of Unna's boot.

A comprehensive bibliography of 177 references is included. The book is thoroughly readable, a helpful addition to the library of anyone interested in varicose veins.—J. L. G.

POPULATION, RACE AND EUGENICS. Morris Siegel, M. D. Pp. 206. Cloth. $3.00. Published by the Author, 546 Barton St., East Hamilton, Ontario, 1939.

This is a little book to tackle such a whale of a problem. Selected studies are quoted to substantiate

"the claim of many eugenic scholars that the decay and ultimate collapse of ancient cultures and empires could be traced to a differential birth-rate that was operating then, similar to the one existing now." It is pointed out that there is a correlation between the cultural intellectual abilities of parents and offsprings. It is noted that the more gifted segments of the population, that is, the professional, tend to have fewer children and thus tend to commit group suicide, all to the detriment of the race as a whole. Many suggestions are made for the curtailment of the birth rate in the less gifted classes and its concommitant stimulation in the more intellectual group. These suggestions follow the usual paths of sterilization of the so-called unfit by the state and subsidization of marriage among the intellectual classes. These projects, of course, depend on more active control of the marriage relationship by the state. It is interesting in a superficial way to comment that in those countries where such control is most in vogue that not only have individual rights been disturbed but in addition intellectual contributions from the "improved population" do not measure up at all with those brought to light in the Anglo-Saxon nations. So that one must still listen to these notions of the sociologists with a lifted eyebrow. Again, it would probably be pretty dull going if all the population were geniuses. The world still needs street-car conductors and garbage collectors as well as professorial deep thinkers.

—M. P. S.

LIFE AND LETTERS OF FIELDING H. GARRISON, by Solomon R. Kagan, M. D.; with an Introduction by Prof. James J. Walsh; The Medico-Historical Press, Boston, Masss. 1938.

Who is there who would not wish to know something of the man who could write that wonderful book "An Introduction to the History of Medicine!" And what a tribute to the modesty of the man in naming that comprehensive volume "An Introduction!"

Dr. Fielding Garrison came of an educated family; his father was a teacher of Greek and Latin and subsequently a lawyer. Little is said of the education of his mother, but she must have been a woman of considerable attainments as she was one of the founders of the "Daughters of the American Revolution". A sister was on the librarian staff of Army Medical Library, and was considered brilliant.

Dr. Garrison was born in Washington, D. C., and graduated from the Central High School in the D. C. and then spent a year studying music, in which he was exceedingly interested and had much talent; he continued to have great interest and entertainment from music throughout his life. He studied languages and mathematics at Johns Hopkins, being awarded an A. B. in 1890. He gained his M. D., to please his father, from the medical school of Georgetown University in Washington, D. C., in 1893. Clara Augusta Brown, whom he made Mrs. Garrison in 1909, was his inspiration, a loving companion and the mother of his three daughters. He had a taste of the practice of medicine while stationed at the Philippines with the army. In the main his activities were in library work and in writing. He became interested in this line of endeavor while a student. Dr. J. S. Billings, the great medical bibliographer, recognized Garrison's facility for this work and encouraged him in it. The great Army Medical Library—The Surgeon General's Library, as often designated—was where he spent most of his active career.

He wrote voluminously for publication. Had he done none other than that referred to in the first paragraph of this review, his name his monument at least for medical men of the world, would have been perfect and enduring; the hundred and fifty to two hundred other publications from his pen are in the nature of a superclimax to a brilliant career. In addition to all these he was a prolific letter writer of the old-fashioned type. These accumulated letters are interesting reading and give a keen insight into the nature of the man. In one letter he says " 'Many are called but few get up', says the bellboy." In another letter we read "Eulogy of the living is apt to be construed as 'Taffy' by the non-eulogized, and the brief impersonal sketch . . . is safer and saner for the subject thereof, as in the case of the bridegroom at the chancel rail—the general humorous feeling, common to such occasions, that 'the worst is yet to come'." The reader has probably already guessed that this is from his reply to a friend who wished to tell the truth about him in some publication.

This volume is interesting reading about an interesting and truly great man. Read it!!—O. H. B.

MEDICAL CLIMATOLOGY, by Clarence A. Mills, Ph. D., M. D., Professor of Experimental Medicine, University of Cincinnati. VII. 300 Pp., 90 figures. Cloth. $4.50. Springfield, Ill., Charles C. Thomas. 1939.

Certainly it has long been thought that climatic factors bore much influence on the health and growth of man. This book represents a fairly complete attempt to evaluate some of these various factors.

We of the Southwest have been engaged in extolling the virtue of our climate as a good place for man to get well and stay well. The author notes that "people living at low levels of energy and bodily vigor in regions of moist heat show little ability to throw off infections that once gain a foothold."

Tables show the low incidence of acute infectious diseases in the Southwest. One table presents very low figures for rheumatic heart disease in our territory, in comparison with the high rate in the North. In this connection, most Southwestern physicians declare that they almost never see rheumatic heart disease in children native to the Southwest.

Studies of temperature variability were made at Tucson and El Paso to compare with similar studies in Boston, New York, Baltimore and several other Eastern cities. These studies lean heavily in favor of our Southwest. It is shown that many diseases tend to set in during periods of excess temperature fluctuations. The inference is obvious. The author believes, that for certain ailments, patients should be advised to take up residence "near the Mexican border from El Paso west." He feels that this is the "choice region from a climatic standpoint in this country."

The book does not pretend to completeness, but it is a valuable contribution to a subject that has not received the attention due it. It is to be hoped that the author will find it expedient to study further, particularly in the Southwest, and present even more detail in a subsequent edition.—M. P. S.

MEDICAL JURISPRUDENCE AND TOXICOLOGY: By William D. McNally, A. B., M. D., Assistant Professor of Medicine and Lecturer in Toxicology, Rush Medical College, University of Chicago; Attending Toxicologist, Presbyterian Hospital; Attending Staff, St. Joseph's Hospital, Chicago. 386 pages with 23 illustrations. Philadelphia and London. W. B. Saunders Company. 1939. Cloth, $3.75 net.

This book is "curt, clear, complete". It discusses in 386 pages everything the physician (except the toxicologist himself) will ever likely have cause to seek. It is very modern and in tune with the pres-

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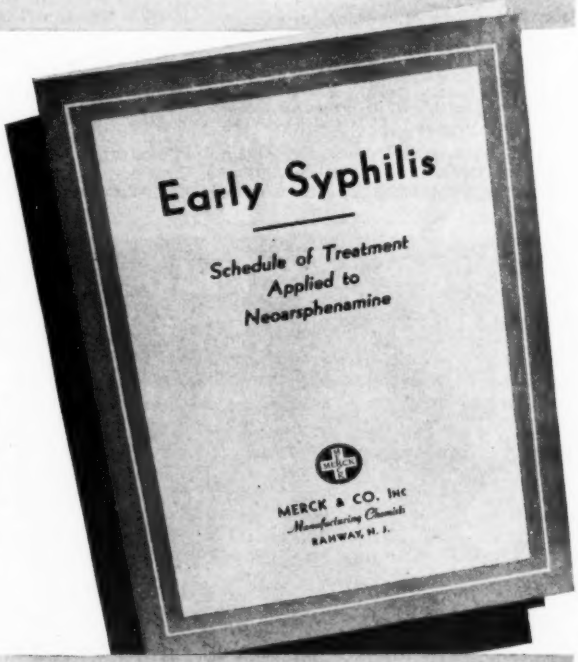

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ent. Excellent discussions of new and modern drugs such as sulfanilamide, amidopyrine, and others, are included. Tests for numerous drugs, together with a brief comment on their source, use, and fields in which they may be encountered. The sections on lead, mercury, and arsenic poisoning are very complete for a book of this size.

Silicosis, a "depression disease", so-called because it was seldom mentioned prior to 1939, has a good short chapter of its own. There is, too, a good chapter on ballistics.

In the jurisprudence section there is short but good information concerning the workman's compensation laws and industrial commissions.

The expert witness, who should be a court's counselor, but who often hinders rather than helps the court, is given some criticism. Especially is this directed toward those attorneys who are prone to use the same experts all the time, sometimes as witnesses for the defense, sometimes for the plaintiff's.

Not the least bit of good advice given is that for witness conduct. The rules are simple but outstanding. Their close scrutiny and practice will prevent many a physician from being made a jackass on the witness stand.—D. Von B.

MENSTRUAL DISORDERS: By C. Frederic Fluhman, B. A., M. D., C. M., Associate Professor of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco, California; Assistant Visiting Obstetrician and Gynecologist to Lane and Stanford University Hospitals; Fellow of the American Gynecological Society. 329 pages with 119 illustartions. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, $5.00 net.

In this book of 315 pages Dr. Fluhmann has presented a thorough study of the subject. The opening chapter presents a historical review of the concepts of menstruation which is interesting and also the chapters on the study of the menstrual cycle and the comparative physiology of menstruation.

Probably the most beneficial information contained in this book is the complete information concerning the sex hormones and the endocrines associated with menstruation.

The commercial sex hormones available for use are described in detail and the trade names of the various products are given which greatly simplifies the problem for the busy practitioner.

In short, Dr. Fluhmann's work will be helpful in giving one a better understanding of the various menstrual disorders encountered.—R. F. T.

A TEXTBOOK OF CLINICAL NEUROLOGY. By Israel S. Wechsler, M. D., Professor of Clinical Neurology, Columbia University, New York; Neurologist, Mount Sinai Hospital; Attending Neurologist, The Montefiore Hospital, New York. Fourth edition, revised. Cloth. Pp. 844, with 162 illustrations. Price, $7.00. Philadelphia and London; W. B. Saunders Company, 1939.

The author dedicates the fourth edition of his popular and authoritative book to the late Frederick Tilney, his former associate.

He has completely revised most of the third edition, which was published only four years ago. During that short interval there were many advances, particularly in the field of therapy, which necessitated revision. The chapter on neuritis, which is now considered as a neuropathy, has been rewritten. The importance of vitamin deficiency in the production of alcoholic and other forms of neuritis is emphasized and the treatment outlined.

The chapter on "The Epilepsies and the Convulsive or Parosyxmal State" contains much new material on diets and on dilantin and ephedrine therapy. In general, the anatomy, physiology and path-

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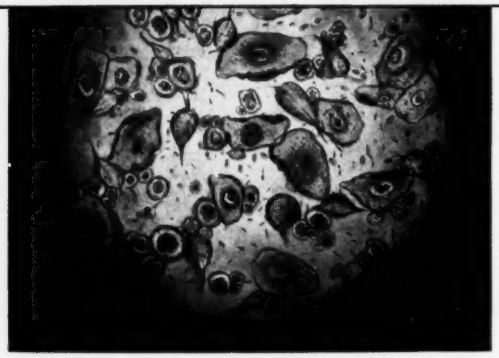

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ology of disease entities have been subordinated to clinical findings and treatment. In the latter field this work is unexcelled. It is of great value to the student and general practitioner.

The author stresses the importance of a carefully taken history, and of methodical physical examination in making a neurological diagnosis. Several new entities are described, and worthwhile additions of therapy have been made in numerous instances.

It is an excellent book and should be in the library of every physician.—C. D. A.

GASTROINTESTINAL DYSFUNCTION. By Barton A. Rheinhart, A. B., M. D., A. O. A.; Associate Professor of Roentgenology, University of Arkansas School of Medicine, etc., etc. With 48 plates. Little Rock, Ark., Central Printing Co. 1939.

The foreword says in part: "this book is dedicated to the proposition that nutritional deficiencies cause the majority of the gastro-intestinal diseases of civilization.

It has a good, even extensive bibliography. It has a good index.

One hates to condemn a brain child by saying only "to hell with it." That was my first thought after first reading; due partly, no doubt, to the poor arrangement of separating illustrative cases and plates (both very good) from their proper place in the text and from each other. Another reading, done only to be fair, led to a much more favorable conclusion. It is as hard to read as Gertrude Stein but with a lot more sense. There is not only food for thought in abundance but much valuable practical material for any branch of medicine with greatest worth to the gastro-enterologist.

He somewhat belabors his dedication but yet makes an adequate case for it.

The monograph style with frequent interruptions of smooth reading, the too, too frequent use of names in the text, the space taken with effects of animal experimentations might all be changed for the good of the volume and the pleasure and benefit of reading.

If one desires, however, to understand the influences which nutritional deficiencies may have on gastro-intestinal dysfunction, here's your book.
—P. G.

FUNCTIONAL DISORDERS OF THE FOOT—THEIR DIAGNOSIS AND TREATMENT: By Frank D. Dickson, M.R., F.A.C.S. (orthopedic surgeon St. Luke's, Kansas City General, and Wheatley Hospitals, Kansas City, Missouri; Providence Hospital, Kansas City, Kansas) and Rex L. Diveley, A.B., M.D., F.A.C.S. (orthopedic surgeon St. Luke's, Kansas City General Research, and Wheatley Hospitals, Kansas City, Missouri; Providence Hospital, Kansas City, Kansas). Cloth. Pp. 305, with 202 illustrations. J. B. Lippincott Company, Philadelphia, Montreal and London. 1939. Price, $5.00.

The authors point out the widespread discomfort and disability arising from foot disorders—which nevertheless receive insufficient attention from the main body of medical men. This book proceeds to give a well illustrated outline of the foot with its aches and pains.

There is a brief discourse on the evolutionary development of the human foot which will be found interesting, though our Christians may deny any arboreal progenitors.

Anatomy of the foot with the associated structures to the knee is concisely presented. This is definitely good. Here, as always, illustrations speak volumes. Physiology and primary causes of foot

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Iodobismitol with Saligenin provides all the systemic effects of bismuth in the treatment of syphilis. It presents bismuth largely in anionic (electro-negative) form. It is rapidly and completely absorbed and slowly excreted, thus providing a relatively prolonged bismuth effect. Repeated injections are well tolerated in both early and late syphilis.

Iodobismitol with Saligenin is a propylene glycol solution containing 6 per cent sodium iodobismuthite, 12 per cent sodium iodide, and 4 per cent saligenin (a local anesthetic).

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unbalance are discussed. Method of examination, and the development of the foot as it progresses through childhood to adult life are discussed with reference to unbalance. The affections of the nails, skin, and bones, together with the referred constitutional diseases as affecting the feet, are each concisely handled.

Foot strapping, exercise and treatment complete a book that can well be recommended to both general practitioner and specialist.—W. J. P.

THE ROCKEFELLER FOUNDATION. Annual Report, 1938. Paper. Pp. 515, Illustrated. 49 West 49th St., New York. 1939.

This is an interesting, informative report on the work done for mankind by the Rockefeller Foundation in 1938. The Foundation appropriated a total of $15,000,000 during the period named. The medical, social and natural sciences received $10,600,000 in grants. Work was carried on in 42 countries of the world. However, 75% of the money given was used in the United States.

The world-wide scope of the activities of the Foundation provide fascinating material in their annual reports. And well does this volume demonstrate the fine things the Foundation has done for humanity—it is the account of the stewardship of the money belonging to mankind in general, held in trust by the Rockefellers for the time being.

—M. P. S.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1938. Cloth. Price, $1.00. Pp. 120. Chicago: American Medical Association, 1939.

This volume contains examples of the various kinds of reports made by the Council on Pharmacy and Chemistry: (1) preliminary reports; (2) supplemental reports on therapeutic or pharmacologic problems; (3) reports on the rejection of preparations offered for the Council's consideration.

Among the preliminary reports in this volume is one on Sulfapyridine, which carries a special article by Dr. Perrin H. Long. After the Food and Drug Administration had released the drug for the use of physicians early in 1939, the Council accepted vari-

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ous brands for inclusion in N. N. R. and in connection with the published descriptions issued another status report (J. A. M. A. 112:1830, May 6, 1939) based on a questionnaire sent to men who had been prominent in the experimental use of the drug. This report, no doubt, will appear in the next volume of reprinted Council reports. Other preliminary reports are the following: Allantoin, a preparation of glyoxyldiureid purposed to supersede the use of surgical maggots; and Sulfapyridine, published shortly before the Council acceptance of this new chemotherapeutic drug.

Among the reports of rejection the following are noteworthy: Collodaurum ,a "colloidal gold" preparation, promoted with unwarranted, exaggerated and misleading claims for its use in the treatment of cancer; Dermo-G, stated to be a mixture of Spermaceti, White Wax, Oil of Sweet Almonds, Sodium Borate, Precipitated Sulphur and Water, an unscientific and superfluous mixture marketed under a therapeutically suggestive name with exaggerated, unwarranted claims; Fru-T-Lax, a needlessly complex and unscientific mixture advertised to the public under a misleading and inadequately descriptive name with claims which are unwarranted; and Hyposols Sulisocol, claimed to be "Sulphur Colloid" in 2 c.c. of "Autoisotonized Solution", exploited for use in arthritis with inadequate evidence of its therapeutic value. Other rejections are explained in the reports on Map and Myoston, Nupercainal-"Ciba", Pulvoids Sulfanilamide and Sodium Bicarbonate (The Drug Products Co., Inc.), Quinoliv, Sedormid, and Tri-Costivin.

THE INFANT AND CHILD IN HEALTH AND DISEASE. With Special Reference to Nursing Care. By John Zahorsky, A. B., M. D., F. A. C. P., Professor of Pediatrics and Director of the Department of Pediatrics, St. Louis University School of Medicine, and Pediatrician-in-Chief to the St. Mary's Group of Hospitals; Fellow of the American Academy of Pediatrics, St. Louis, Mo., and Elizabeth Noyes, R. N., Supervisor and Instructor of Pediatrics, Children's Hospital, San Francisco, Calif. Pp. 496. Illustrated. Cloth. $3.00, St. Louis, The C. V. Mosby Co. 1939.

This is the second edition of a useful text on pediatric nursing. In the chapter on Growth and Development we note a highly reasonable statement "from time immemorial, educators and philosophers have written treatises on the education of children, and emphatic statements on methods permeate all, and these assertions are true—occasionally." Praises to the author, who must be a good father! Too many youngsters are spoiled in the making by well-meaning, book-learned authorities.

The book is comprehensive in its scope. All phases of pediatric nursing are dealt with. The chapters on the various childhood diseases are easy to read, are brief and to the point. Many valuable methods of handling the sick child are outlined. The book should be standard in all schools of nursing.

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